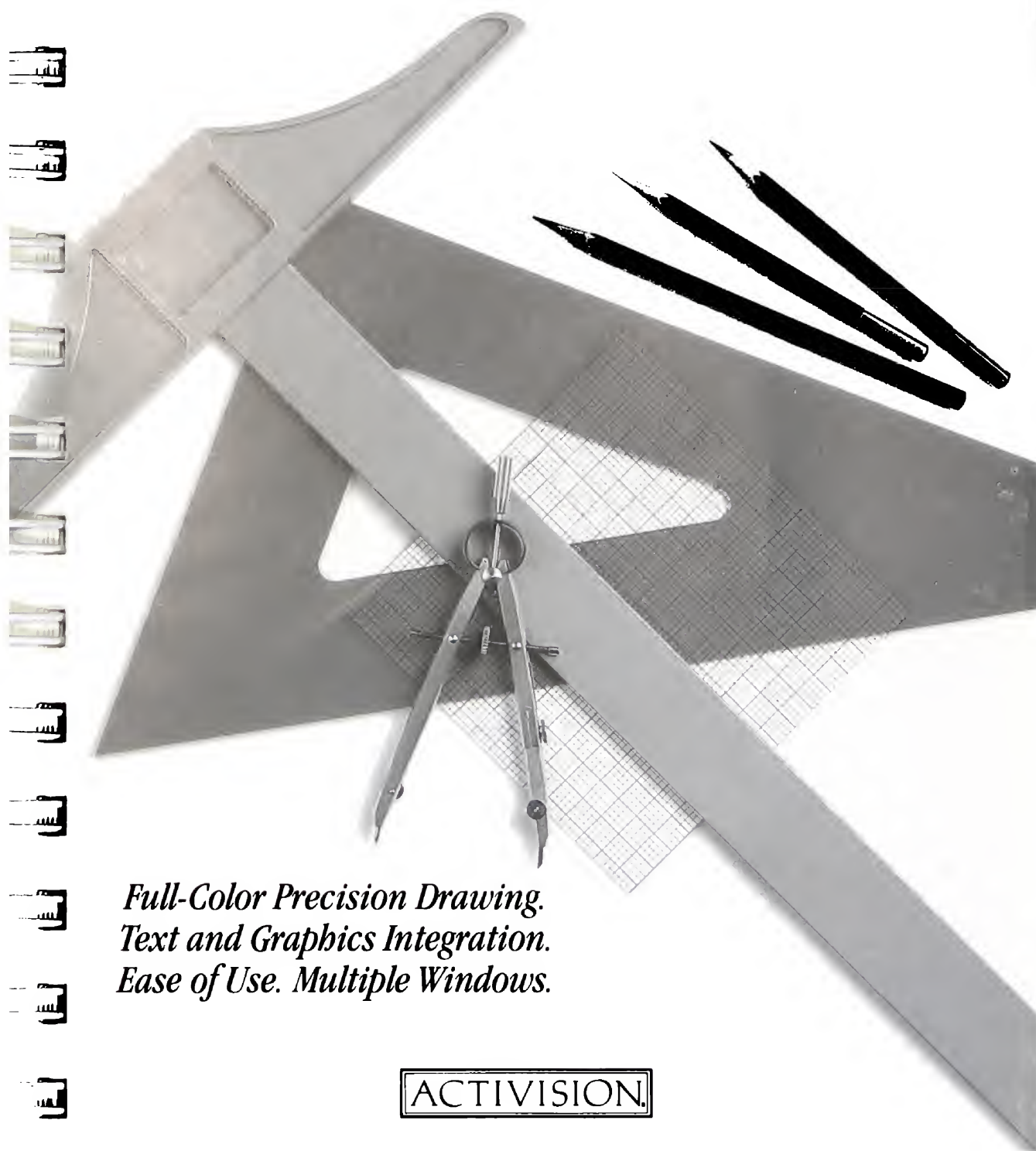




Draw Plus™

for the Apple® IIgs™



*Full-Color Precision Drawing.
Text and Graphics Integration.
Ease of Use. Multiple Windows.*

ACTIVISION

CREDITS

Draw Plus was designed and developed by Version Soft, Inc.

Produced by Paul Zuzelo.

Special thanks to Phillip Corrigan, J. David Eisenberg, Rick Gusa, Sylvester Walker, and Marc Weber.

User's guide by Jeff Schwamberger. Editorial management by Steven Young.

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Contents

Introduction	1
How to Use this Guide	2
What You'll Need	2
Using the Mouse	3
The Command Key	3
A Note on Type Styles	4
A Note to the Adventuresome	4

A Guided Tour of Draw Plus

Chapter 1 – Getting Started	5
Starting <i>Draw Plus</i>	5
The Drawing Board	8
The Pointer	9
The Tools	9
The Border Palette	11
The Arrow Palette	12
The Color/Pattern Palette	12
The Drawing Window	13
Quitting <i>Draw Plus</i>	15
Chapter 2 – At the Drawing Board	17
Drawing a Rectangle	18
The Rulers and the Grid	20
The Rulers	20
The Grid	21
Handling an Object	22
Selecting an Object	23
Moving an Object	23

Contents

Using Undo	24
Using Clear	25
Changing the Size of an Object	26
Scrolling	27
Filling an Object with a Color or Pattern	30
The Straight Line	31
The Polyline	32
Selecting a Tool for Repeated Use	34
 Chapter 3 – Saving, Getting, and Printing	
Drawings	37
Saving a Drawing	37
Printing a Drawing	40
Closing a Drawing	42
Starting a New Drawing	44
Opening a Drawing	45
 Chapter 4 – Text, Titles, and Labels	47
Fonts and Font Styles	47
Adding Text	48
Changing Fonts	49
Changing Size and Style	51
Positioning Text	52
Adding a Title	54
 Chapter 5 – Handling Objects	57
Selecting Objects	57
The Selection Box	57
The Shift Key and the Mouse Button	58
Select All	59
Copying an Object	59
Duplicating an Object	60
Cutting and Pasting an Object	60

Moving an Object to Another Drawing	61
Stretching an Object	62
Reshaping an Object	63
Rounding Corners	64
Changing the Stacking Order	65
Rotating Objects	67
Flipping an Object Horizontally	67
Flipping an Object Vertically	68
Grouping Objects	68
Ungrouping Objects	69
Locking and Unlocking Objects	69
Aligning Objects to the Grid	70
 Chapter 6 – Advanced Techniques	71
Changing Patterns	71
Choosing Colors for the Palette	73
Creating and Using Icons	79
Creating an Icon	79
Using an Icon	82
Changing the Drawing Size	83
Creating a Custom Ruler	88
 Shortcuts	91
Tools	91
Straight Line	92
Rectangles (Hollow or Filled)	92
Rounded Rectangles (Hollow or Filled)	92
Ovals (Hollow or Filled)	92
Polygons (Hollow or Filled)	92
Border Palette	93
Menus	93

Contents

File	93
Dialog Boxes	93
New	93
Open	93
Close	93
Save	93
Print	94
Quit	94
Edit	94
Undo	94
Cut	94
Copy	94
Paste	94
Duplicate	94
Text	95
Choose Font	95
Arrange	95
Move to Front	95
Move to Back	95
Group	95
Ungroup	95
Color	95
Edit Color	95

<i>Reference</i>	97
------------------------	----

You'll find a detailed table of contents for this section on page 97.

<i>Glossary</i>	195
-----------------------	-----

<i>Index</i>	205
--------------------	-----



Introduction

Draw Plus gives you everything you need to create structured graphics such as charts and graphs, floor plans, architectural drawings, and forms, to name just a few. What makes *Draw Plus* especially valuable is that it not only lets you create complex graphics, but that it lets you change them easily, too.

Draw Plus approaches the task of creating graphics differently from a paint program like *Paintworks Plus*.™ Instead of painting images that become part of a page, *Draw Plus* lets you create objects that are always independent of the page they're on. You can move them around, change their shape and size, copy them, color them, stack them on top of each other, group them into units, and so on. The objects you build a graphic from are what make *Draw Plus* so powerful yet so flexible.

Draw Plus has lots of features that make it easy to be precise when you need to. You can scale a drawing up and down so that you can work on it in fine detail or rearrange it from a broad perspective. You can create custom rulers that let you translate a life-size model into a scale drawing automatically. There are also features that give you the equivalents of a T-square, a protractor, a compass, and a straight edge.

Draw Plus lets you use up to 16 colors at a time – and you can choose those 16 from a total of 4096 different colors. You can also use up to 15 patterns at a time. You can create your own patterns and you can mix colors and patterns together. *Draw Plus* also lets you create a library of icons – small pictures that you can use over and over again.

Draw Plus also has a full range of text fonts, font sizes, and font styles you can choose from.

Introduction

If you own *Paintworks Plus* or *Writer's Choice elite*,[™] you can use the drawings you create using *Draw Plus* with them.

How to Use this Guide

This guide has four sections.

"A Guided Tour of *Draw Plus*" takes you through all the basic features of *Draw Plus*. It makes many stops along the way to let you experiment with the program and become familiar with how it works.

"Shortcuts" explains alternate ways to use many of the functions of *Draw Plus*. You'll find that once you're familiar with *Draw Plus*, these shortcuts can save you time and effort.

The "Reference" section covers every aspect of *Draw Plus*. It's the place to find anything that isn't covered in the guided tour. The "Reference" section is organized by the way things appear on the screen: the tool, border, arrow, and color/pattern palettes are illustrated and explained, and the menu functions are listed according to which menu they appear on.

The "Glossary" lists and defines special terms used in the guide that you may not know.

What You'll Need

- A blank formatted disk. It's always best to save the drawings you create on a disk other than the *Draw Plus* program disk.
- A printer, if you want to make printed copies of the drawings you create.
- Imagination. What you can create with *Draw Plus* is limited only by your invention.

Using the Mouse

This guide uses four terms to designate the different ways you can use the mouse. Here's what the terms mean:

Click means position the pointer and then press and quickly release the button on the mouse.

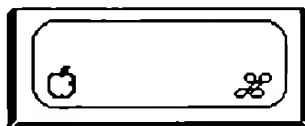
Double-click means position the pointer and then press and quickly release the mouse button twice.

Drag means position the pointer and hold the mouse button down while you move the mouse. You release the mouse button to choose a menu item or to place an object in a picture.

Press means position the pointer and then hold down the mouse button without moving the mouse.

The Command Key

Throughout this guide, keys are referred to by the name printed on them. This key



is called the *command* key.

A Note on Type Styles

In this guide, **boldface** type is used for words and messages that appear on the screen. Boldface is also used for words you're supposed to type or keys you're supposed to press. For example,

Press *delete*

means that you're to press the key that has the word *delete* printed on it.

Terms that appear in *italics* are explained in the glossary.

A Note to the Adventurousome

If you'd prefer to explore *Draw Plus* on your own instead of working through the guided tour in the first six chapters, there's no reason not to. *Draw Plus* is simple and straightforward and works the way you'd expect it to.

Don't overlook the "Shortcuts" section of this guide (pages 91-95). It describes easy ways to get things done. You'll also find in the "Reference" section (pages 97-193) an explanation of every item in every menu – just in case you need help.



A Guided Tour of Draw Plus

Chapter 1

Getting Started

Starting Draw Plus

There are two ways to start *Draw Plus*. The method you use depends on whether your computer is off or whether it's on and the *launcher* is on the screen.

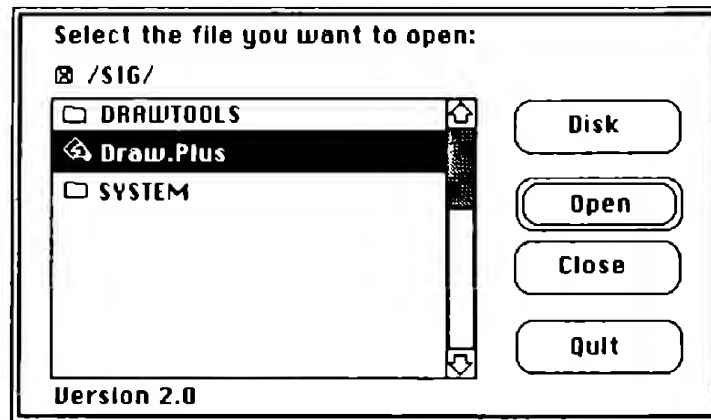
Note: Don't use a RAMdisk with *Draw Plus*. If you've set aside memory for a RAMdisk, go to the Control Panel that's part of the Apple II GS operating system and reduce both the minimum and maximum memory for the RAMdisk to zero.

If the computer is off:

1. If you have a printer, be sure it's off.
2. Turn on the monitor – but *not* the computer.
3. Put the *Draw Plus* disk in the disk drive with the label side up.

Getting Started

4. Turn on the computer (and your printer, if you have one). The launcher loads into the computer. After a few moments, the launcher appears on the screen. It looks like this:



5. Find **Draw.Plus** on the list. If you don't see it, use the mouse to position the tip of the *pointer* (the black arrow) on the down arrow (at the bottom right of the list). Click the mouse button to scroll the list up until you find **Draw.Plus**.
6. Position the tip of the pointer on **Draw.Plus** and click the mouse button. **Draw.Plus** is highlighted (it changes from black on white to white on black).
7. Position the pointer on the **Open** button and click the mouse button. *Draw Plus* starts loading into the computer.

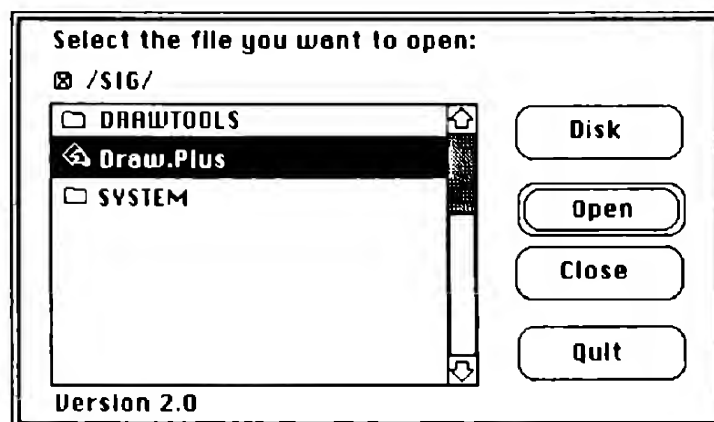
After a minute or two, the title screen appears and then the *drawing window*.

Note: Terms that appear in *italics* are explained in the glossary.

The screen should look like the illustration on page 8.

If the launcher is on the screen:

1. The screen looks something like this:



If the *Draw Plus* disk isn't in the drive, eject the disk that's there and replace it with the *Draw Plus* disk, label side up. Then position the pointer on the **Disk** button and click the mouse button. In a moment, a new list of names appears on the screen.

Note: *Don't* eject a disk when the disk drive is running. Wait until the drive stops, then eject the disk.

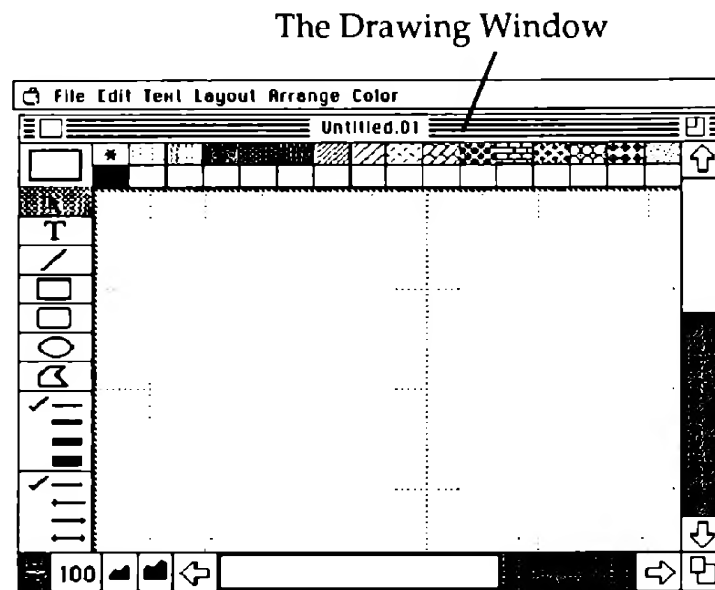
2. Find **Draw.Plus** on the list. If you don't see it, use the mouse to position the tip of the *pointer* (the black arrow) on the down arrow (at the bottom right of the list). Click the mouse button to scroll the list up until you find **Draw.Plus**.
3. Position the tip of the pointer on **Draw.Plus** and click the mouse button. **Draw.Plus** is highlighted (it changes from black on white to white on black).
4. Position the pointer on the **Open** button and click the mouse button. *Draw Plus* starts loading into the computer.

Getting Started

After a minute or two, the title screen appears and then the *drawing window*.

Note: Terms that appear in *italics* are explained in the glossary.

The screen should look like this:



Draw Plus is now ready for you to use.

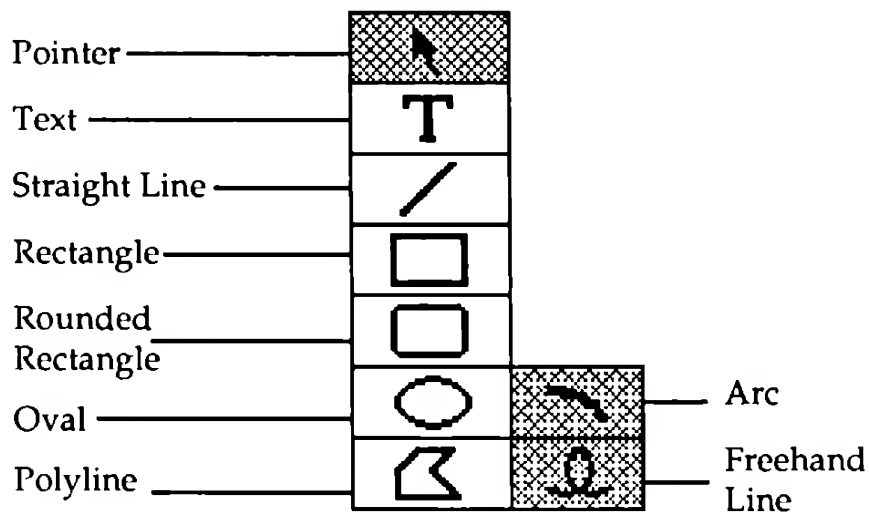
The Drawing Board

The drawing board has displayed on it everything you need to create drawings: a piece of blank drawing “paper,” drawing tools, and a palette of colors and patterns. It also has a menu at the top that lets you print and save drawings, make copies of them, lay them out and arrange them, add text to them, and mix colors and create patterns for them.



The Pointer. Move the mouse around. By moving the mouse, you also move the pointer around the drawing board. The small picture that's used to represent the pointer – both in the drawing window and in the tool palette – is called an *icon*.

The Tools. The illustration below identifies each of the tools and explains its use.



Pointer. Select and position objects.

Text. Activate the keyboard so you can add text to the drawing in the drawing window.

Straight Line. Draw a straight line; its color (or pattern) and width match the line selected on the *border* palette.

Rectangle. Draw either an outline of a rectangle or square, or a rectangle or square that's filled with a color or pattern.

Getting Started

Rounded Rectangle. Draw either an outline of a rectangle or square with rounded corners, or a rounded rectangle or square that's filled with a color or pattern.

Oval. Draw either an outline of an oval or circle, or an oval or circle that's filled with a color or pattern.

Arc. Draw an arc that's one quarter of the circumference of a circle or oval, or draw a quarter slice of a circle or oval that's filled with a color or pattern. The arc tool isn't displayed in the drawing window. To select the arc tool, point to the oval and press *option - shift*. The oval icon changes to the arc icon on the tool palette.

Polyline. Draw an open figure made up of any number of straight lines; or draw either the outline of a polygon, or a polygon that's filled with a color or pattern.

Freehand Line. Draw lines freehand. The freehand line tool isn't displayed on the tool palette. To select the freehand line tool, point to the polyline and press *option - shift*. The polyline icon changes to the freehand line icon on the tool palette.

A line or the outline of a shape always matches the color (or pattern) and width of the line selected on the border palette.

A filled shape is always filled with the selected color (or pattern) and has an outline matching the color (or pattern) and the width of the line selected on the border palette.

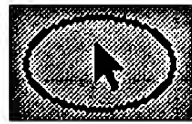
When you start *Draw Plus*, the pointer is always selected. The icon of the tool that's selected has a gray rather than a white background.

Here's how to select a tool:

Move the pointer so the tip of the arrow is in the box with the oval.



Click the mouse button.



The background behind the icon changes to gray. The oval tool is now selected.

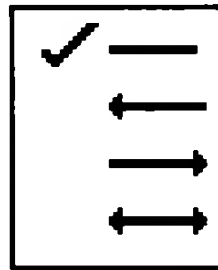


The Border Palette. The border palette has four different line widths you can choose from. The thinnest line is the same width as the ruler lines (the grid of lines that cover the drawing area in the drawing window). The other lines are two, three, and four times as wide. The line width with the check beside it is the one that's selected. To select a line width, you point to the line you want and click the mouse button.

Getting Started

The border palette controls the width of the straight line tool and the width of the outline of all the shapes (the hollow and filled rectangles, the hollow and filled ovals, and the hollow and filled polylines).

You can change the border lines to a color or pattern. How to do so is explained under “Border Palette” in the “Shortcuts” section.



The Arrow Palette. You use the arrow palette to put arrowheads on lines you draw with the straight line tool. The arrow palette has three different kinds of arrows you can choose from. One has an arrowhead pointing left, and one an arrowhead pointing right. The third has arrowheads at both ends. You use the line without any arrowhead to draw simple straight lines.

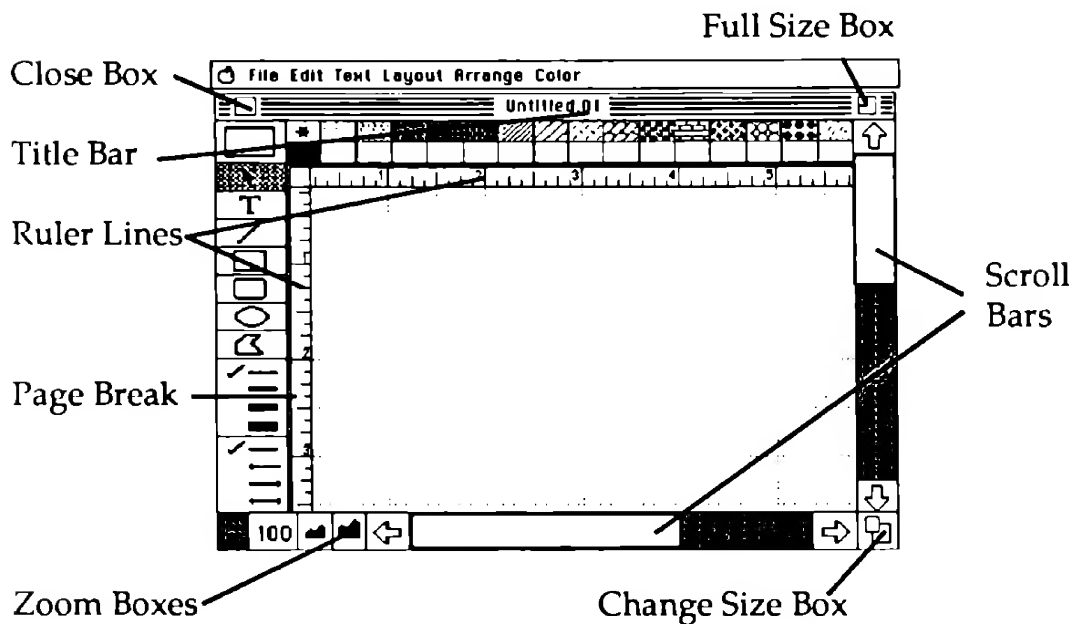
The Color/Pattern Palette. The color/pattern palette contains the colors and the patterns you have to choose from in creating a picture.



The color in the large box at the left end of the palette contains the color or pattern that's selected. You select a color or pattern by pointing to it and clicking the mouse button.

You can choose different colors and create new patterns for the palette. “Changing Patterns” and “Choosing Colors” (both of which you’ll find in Chapter 6, “Advanced Techniques”) explain how.

The Drawing Window. The drawing window frames the drawing board’s working area.



The lines that crisscross the page are ruler lines. They help you line up objects. The page breaks show you where the edges of a real piece of paper will be when you print a drawing.

You can draw only on the part of the drawing that’s in the drawing window. The entire drawing can be up six feet long by eight feet wide, and you can use all of that space by moving the page under the drawing window to expose the parts that are hidden.

You use the horizontal *scroll bar* to move a drawing left or right in the drawing window. You use the vertical scroll bar to move a drawing up or down in the drawing window. To

Getting Started

use the scroll bars, you point to the *scroll box*, hold down the mouse button, and move the box in the direction you want the drawing to move. To scroll a drawing an inch at a time, you point to an arrow and click the mouse button or hold the mouse button down. To scroll a drawing a windowful at a time, point to the gray area above or below the scroll box and click the mouse button.

The *close box* lets you remove a drawing from the screen. To use the close box, you point to the close box and click the mouse button (be sure to save the document first if you want to keep it).

You use the *full size box* to expand a drawing window to fill the entire drawing board (or to return an expanded drawing window to its original size). To expand or shrink a drawing window, you point to the full size box and click the mouse button.

The *change size box* lets you make a drawing window any size you want it to be. To change the size of a window, you point to the change size box, press the mouse button, and hold it down. An outline appears around the drawing window. You drag the outline of the window until it's the size you want, then release the mouse button. The drawing window is redrawn in the size the outline indicates.

You use the *zoom boxes* to change the scale of the drawing in the window. Each time you click the zoom down box, the scale of the drawing is reduced by half (so twice as much of the drawing appears on the screen). Each time you click the zoom up box, the scale of the drawing is doubled (so only half as much of it appears on the screen). You can double the size of the drawing until you reach the maximum drawing size, 96 by 80 inches.

Quitting Draw Plus

If you want to quit *Draw Plus* at any time, first save the drawing you're working on (see "Saving a Drawing" in Chapter 3, "Saving, Getting, and Printing Drawings"), then choose **Quit** from the **File** menu.

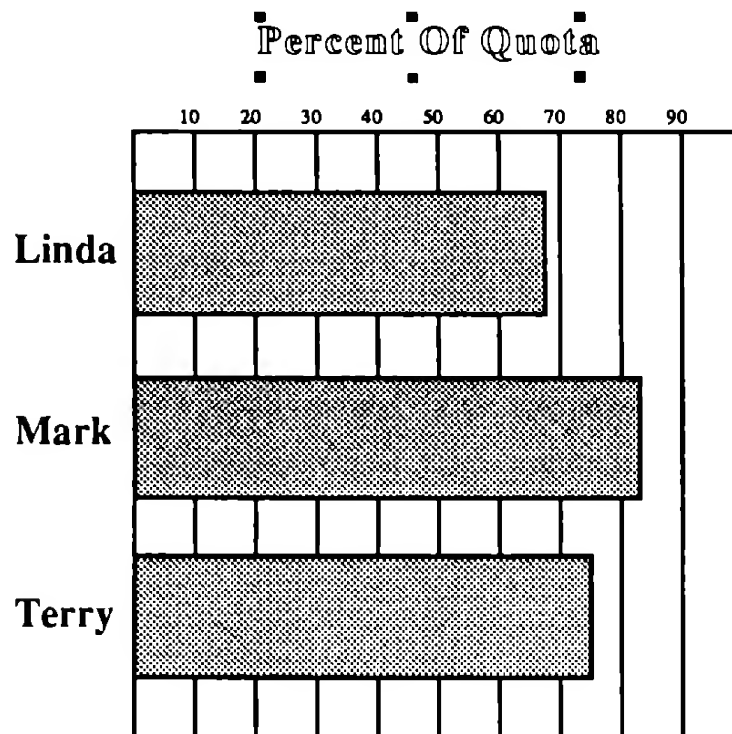


Chapter 2

At the Drawing Board

In this chapter you'll have the opportunity to experiment with the basic tools on the drawing board so that you can discover for yourself how simple they are to use. You'll also find out how to correct a mistake if you happen to make one.

The best way to learn how *Draw Plus* works is to create a drawing. The first project is this simple bar graph:



Don't feel you need to follow exactly the projects used as examples in the next few chapters. Their purpose is only to demonstrate what *Draw Plus* can do. Follow them however much or little you like.

At the Drawing Board

Note: If you want to stop at any point in this chapter and save the picture you've been working on, the beginning of Chapter 3, "Saving, Getting, and Printing a Drawing," explains how to save a picture.

Drawing a Rectangle

To draw a rectangle you use the rectangle tool.

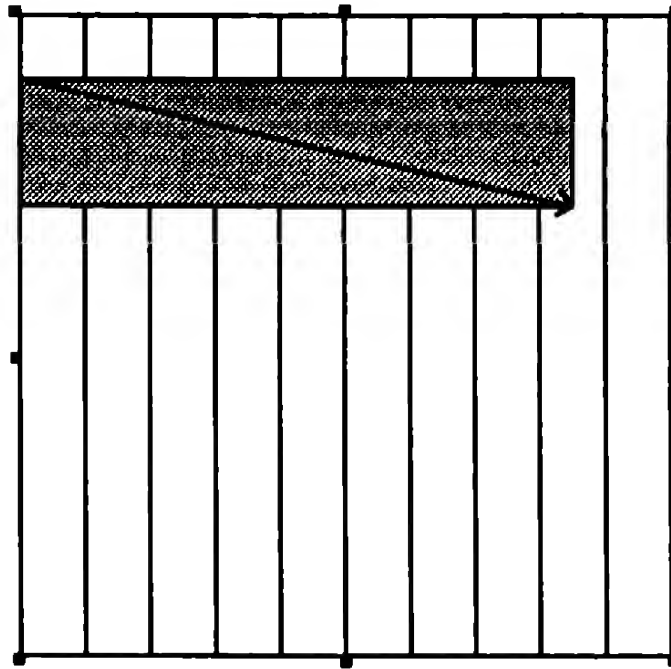
Try this:

Point to the rectangle in the tool palette with the pointer, then click the mouse button. The background behind the rectangle changes to gray to let you know the rectangle tool is selected.

Move the pointer to the drawing window. Notice that as soon as the pointer is inside the drawing window it changes to a small cross. The cross is still the pointer; it's changed shape to make it easier for you to position the object you're going to draw.

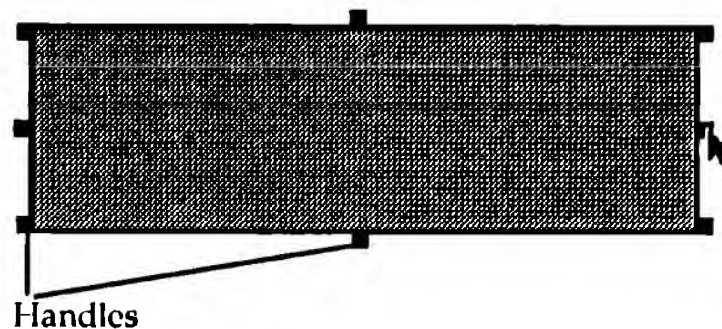
Before you draw a rectangle, move the pointer around the window a bit. Notice that it moves smoothly.

To draw a rectangle, position the pointer where you want the upper left corner of the rectangle to be.



Hold down the mouse button and drag down and to the right. Notice that the outline of the rectangle that appears doesn't move smoothly like the pointer does. The outline jumps from one position to the next a quarter of an inch at a time.

When the outline of the rectangle is the size you want the rectangle itself to be, release the mouse button. A rectangle like this one appears:



At the Drawing Board

The squares around the edges of the rectangle are called *handles*. They let you know that the rectangle is selected. You can also use them to change the shape of the rectangle.

The Rulers and the Grid

Draw Plus has two layout tools you'll find especially useful: the *rulers* and the *grid*.

The Rulers. To display the rulers, first point to the word **Layout** on the menu bar.

The Menu Bar

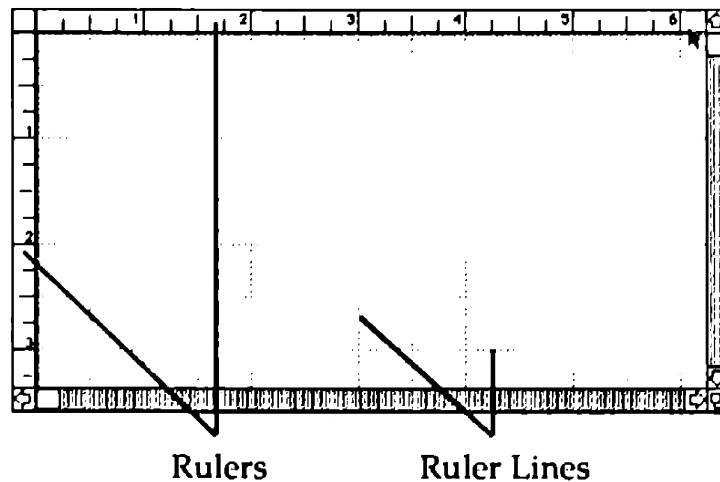


Next, hold down the mouse button. When you do, **Layout** is highlighted and a menu of items appears below it.



Keep holding down the mouse button, and drag the pointer down until **Show Rulers** is highlighted. Release the mouse button.

Show Rulers flickers, the menu closes, and the page in the drawing window goes blank for a moment. Then rulers are drawn along the top and down the left side of the window, and the *ruler lines* are redrawn.



The ruler lines are extensions of the rulers. Notice that they extend from the inch and half-inch marks.

The ruler lines are *passive* guides – they’re there for you to follow if you want to.

The Grid. Don’t confuse the grid with the ruler lines. The ruler lines are the lines you can see crisscrossing the page in the drawing window. The grid, on the other hand, is invisible. You can see the effect the grid has when you’re drawing, but you can never see the grid itself.

At the Drawing Board

More important, unlike the ruler lines, the grid is an *active* guide. It's an invisible force that pulls objects that you draw into certain positions.

The grid is what caused the outline of the rectangle you were drawing to jump in quarter-inch steps. The grid's lines of force appear once every quarter of an inch, and the outline of the rectangle was jumping from one to the next.

You can best understand how the grid works by drawing a second rectangle with the grid turned off.

To turn the grid off, select **Turn Grid Off** from the **Layout** menu. To do that, point to **Layout**, hold down the mouse button, drag the mouse down until **Turn Grid Off** is highlighted, then release the mouse button. **Turn Grid Off** flickers, then the menu closes (the next time you display the **Layout** menu, **Turn Grid Off** is replaced by **Turn Grid On**).

Select the rectangle tool again. Move the pointer to the drawing window, and hold down the mouse button. As you drag the mouse down and to the right, notice how smoothly the outline moves. Release the mouse button.

The grid is independent of the rulers and the ruler lines. The grid can be on when both the rulers and the ruler lines are hidden from view. But it, nonetheless, coincides with the ruler lines because its lines of force cross every quarter inch.

Turn the grid back on by selecting **Turn Grid On** from the **Layout** menu.

Handling an Object

If you've ever used *Paintworks Plus* or a paint program like it, you'll notice a difference in the way *Draw Plus* works. *Draw*

At the Drawing Board

Plus treats everything you draw as a separate object. You can select an object at any time and move it around or change it in any number of ways.

Selecting an Object

You select an object by pointing to it and clicking the mouse button. Eight handles appear around its edges to signal that it's selected and to let you manipulate it.

You can select more than one object at a time by drawing a selection box around them. To draw a selection box, you position the arrow-shaped pointer above and to the left of the objects you want to select, then hold down the mouse button, and drag the rectangular outline that appears down and to the right. When the selection box encloses all the objects you want to select, you release the mouse button. Handles appear on all the objects that were inside the selection box.

Moving an Object







You move an object by pointing to it, holding down the mouse button, and then dragging the outline of the object to the place where you want *Draw Plus* to move it. When you release the mouse button, the object appears in its new location.

If you select a group of objects, you can move them all simultaneously.

Using Undo

Undo cancels the last change you made to a drawing.

To use **Undo**, you pull down the **Edit** menu and choose **Undo**.

Edit	
Undo	 Z
Cut	 X
Copy	 C
Paste	 V
Clear	
Duplicate	 D
Select All	 A
Reshape	
Round Corners...	
Arc Radius Lines	

Choose **Undo** and watch what happens to the drawing in the drawing window: if you moved one of the rectangles, *Draw Plus* moves it back to its earlier position; if you haven't done anything to the drawing window since you drew the second rectangle, then *Draw Plus* erases the rectangle.

To put back what **Undo** has just erased, choose **Undo** from the **Edit** menu again.

Note: Not everything you do can be undone. In general, **Undo** affects only changes you've made to a drawing – anything you do using a tool or a function on the **Edit** menu.

You can't use **Undo** to reverse a change you've made to a tool (usually because it's easy enough for you to reverse the change yourself). For example, you can't undo the *font* you've selected, although you can undo the last text you added to a drawing using that font.

You can't undo anything you do using a command on the **File** menu. For example, it's impossible to "unsave" a picture once you've saved it.

Using Clear

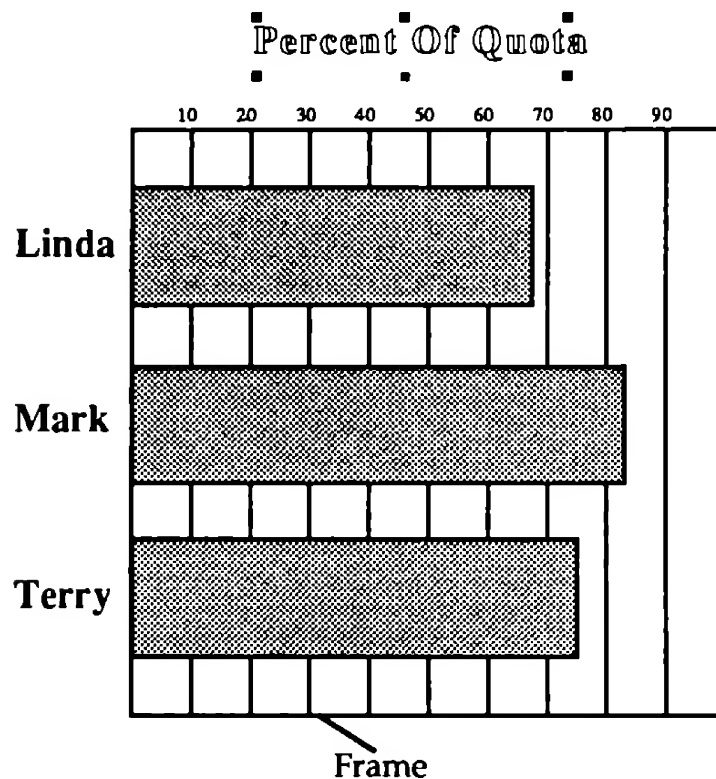
You can use **Clear** to erase an object from the drawing window.

To use **Clear**, you first select the object (or objects) you want to erase, then choose **Clear** from the **Edit** menu. **Clear** flickers, the **Edit** menu closes, and the object you selected disappears.

Use **Clear** to erase one of the two rectangles you've drawn. Then move the other rectangle so that its upper left corner is 2 1/2 inches from the left edge of the drawing window and 2 inches from the top edge.

Changing the Size of an Object

The first part of the bar graph you're going to draw is the frame.



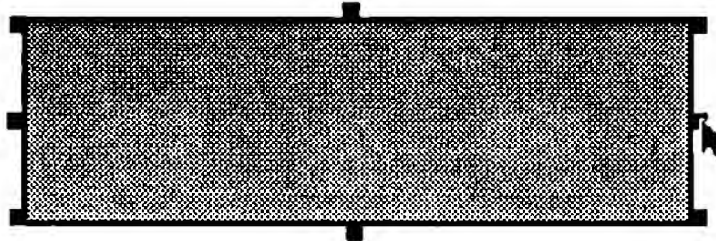
The frame needs to be five inches long and five wide. To make the rectangle you've already drawn long enough and wide enough to be the frame, you have to change its size.

To change the size of an object, you drag one of its handles in the direction you want the size to change.

Here's how to enlarge the rectangle you've already drawn:

First, select the rectangle if it isn't selected already. Point to one of the handles on its right side, and drag it as far right as possible (notice that there's a line on the ruler that follows the movement of the pointer). A dotted outline appears to show you how you're changing the rectangle. Release the mouse button. The rectangle expands so that it's as wide as the dotted outline was.

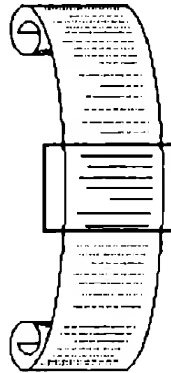
Note: If the rectangle moved to the right rather than getting wider, you didn't have the pointer positioned on the handle correctly. The tip of the arrow should be inside the handle, like this:



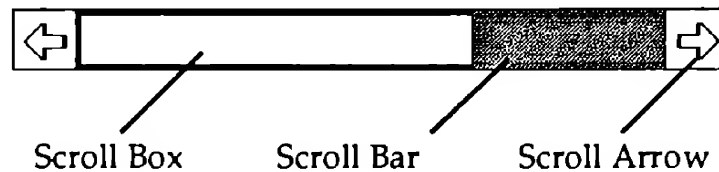
Even after you've widened the rectangle, it still isn't wide enough. Its right edge needs to be even with the 7 1/2-inch mark on the ruler at the top, which is hidden behind the right side of the drawing window. To display the part of the page that's hidden, you *scroll* the page to the left.

Scrolling

A drawing usually takes up more space than can appear in the drawing window at one time. To see all of the drawing, you scroll the drawing behind the drawing window. You can scroll a drawing both up and down, and left and right.



To scroll a drawing behind the drawing window, you use the *scroll bars*. One is located along the right side of the drawing window, the other along the bottom.



The scroll box shows you which part of a drawing you're looking at in the drawing window. If you think of the vertical scroll bar (the one along the right side of the drawing window) as representing the entire length of a drawing, then the position of the scroll box shows you the part that you're seeing in the drawing window. If the scroll box is at the top, for example, then the part of the drawing on the screen is at the top of the drawing. If the scroll box is at the bottom, then the part of the drawing on the screen is at the bottom of the drawing.

The size of the scroll box, compared to the length of the bar, tells you how much of the entire drawing you can see in the drawing window at one time. The page you're drawing the

bar graph on is 11 1/2 inches long, and the drawing window shows about 3 1/2 inches, so you're looking at a little less than one third of the entire page.

To scroll a drawing up or down an inch at a time, you point to the up or down arrow (at the top and bottom of the vertical scroll bar) and click the mouse button. To scroll a drawing left or right an inch at a time, you point to the left or right arrow at the ends of the horizontal scroll bar (the one along the bottom of the screen), and click the mouse button. To scroll a drawing continuously inch by inch, you point to one of the arrows and hold down the mouse button.

To scroll through a drawing "window by window," you point to the area of the scroll bar above or below, or to the left or right of the scroll box and click the mouse button.

To scroll to the bottom of a drawing, you drag the scroll box to the bottom of the vertical scroll bar; to scroll to the top, you drag the scroll box to the top. To scroll to the left edge of the page, you drag the scroll box to the left end of the horizontal scroll bar; to scroll to the right edge of the page, you drag the scroll box all the way to the right.

To widen the rectangle for the bar graph frame to the 7 1/2 inch mark, first click the right arrow at the right end of the horizontal scroll bar twice. The entire page moves two inches to the right behind the drawing window, and the 7 1/2-inch mark on the ruler appears. Point to one of the handles on the right edge of the rectangle, hold down the mouse button, and drag the right side of the rectangle to the 7 1/2-inch mark.

Use the same technique to lengthen the rectangle:

Point to one of the handles on the bottom edge of the rectangle, hold down the mouse button, and drag the bottom of the rectangle down as far as you can. Release the mouse

button. Move the page down by clicking the down arrow or dragging the scroll box down. Keep repeating the process until the bottom of the rectangle is even with the 7-inch mark on the ruler at the left.

Filling an Object with a Color or Pattern

The rectangle you've just created is blank, but it's not empty. Notice that you can't see the ruler lines behind it. That's because the rectangle is colored white. You can fill the rectangle with any color or pattern in the palette at the top of the screen by selecting the rectangle, pointing to the color or pattern you want, and clicking the mouse button. You can change from a color to a pattern by the same process.

Make sure the rectangle is selected, then point to a color, click the mouse button, and watch what happens. Then point to a pattern and click the mouse button.

Notice that the large box that's to the left of the color/pattern palette remains white even though you've changed the rectangle to a color or pattern. The large box shows which color or pattern is selected. But it affects only a new object that you're drawing. That's why the two rectangles you drew at the start were white – because white was the selected color.

You can make an object transparent by selecting the box with the asterisk in it (it's in the top row, farthest to the left). Try it.

It's useful to be able to make an object transparent. If you want to place another object in front of it, you can still use the ruler lines to help you position the object. Once you've done that, you can fill the transparent object with a color or pattern.

Leave the rectangle you've drawn transparent for now.

The Straight Line

The next element to add to the graph is a series of lines to mark the numerical divisions of the graph. The most straightforward (although not the simplest) way to create those lines is with the straight line tool. (It's actually simpler to create the lines with the polyline tool; how to do so is explained in the next section.)

To use the straight line tool, you select the straight line icon on the tool palette, position the pointer in the drawing window at the place where you want the line to start, then hold down the mouse button and drag the mouse in the direction you want the line to extend. When the line is the length you want, you release the mouse button.

Draw the line that marks the first division on the graph with the straight line tool. First, select the straight line tool and position the pointer on the top edge of the frame directly below the 3-inch mark on the top ruler. Hold down the mouse button and drag the line that appears down as far as you can, then release the mouse button.

To finish the line, scroll down to the bottom half of the graph, and use the handle on the bottom end of the line to stretch the line to the bottom edge of the frame.

You have to repeat the same process eight more times to mark all the segments on the graph. While the process is straightforward, it's tedious. Using the polyline tool is much more efficient.

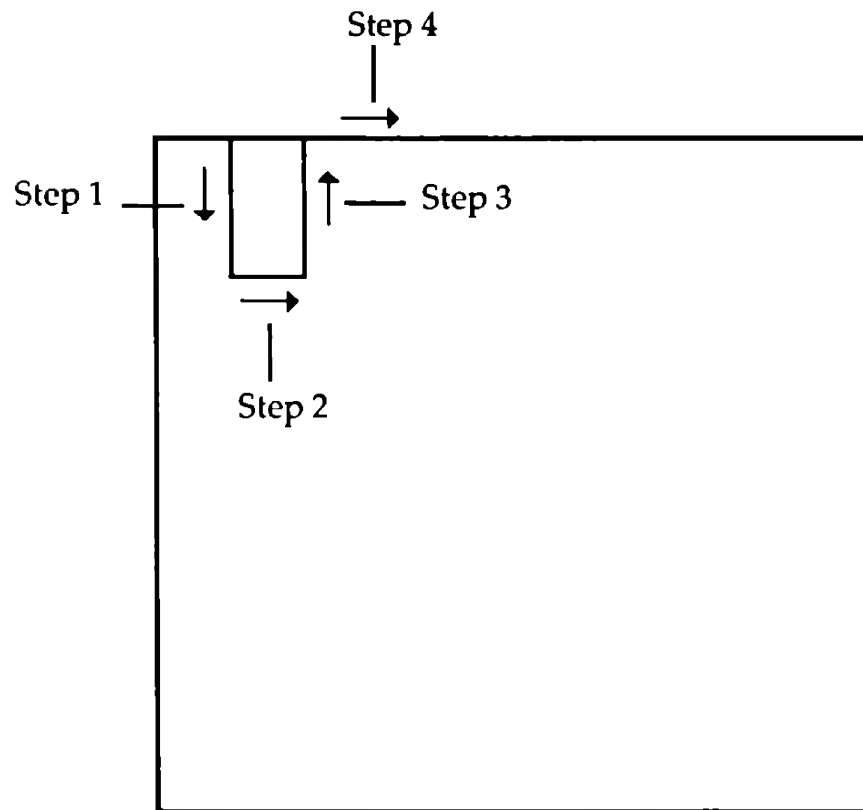
The Polyline

You can use the polyline tool to draw a series of connected lines. You can draw either a polygon (a closed figure, in which the first point and the last point meet) or an open figure.

To draw a polyline, you first select the polyline icon from the tool palette, then position the pointer at the place in the drawing window where you want the polyline to start. You click the mouse button to anchor one end of the first line, then move the pointer to the place where you want the first line to end and the second to start. You repeat that process until you've drawn the entire figure. You end the figure by double-clicking the mouse button.

Here's how you mark the segments on the graph with the polyline tool:

First, use either **Undo** or **Clear** to erase the line you drew with the straight line tool in the last section, and make sure the transparent fill (the asterisk) is selected. Then select the polyline tool and position the pointer on the top edge of the frame directly below the 3-inch mark on the top ruler. Click the mouse button to anchor the beginning of the first line, then follow the steps below.



1. Draw a line down an inch or so and click the mouse button.
2. Draw a line to the right a half inch and click the mouse button again.
3. Draw a line up to the top edge of the frame and click the mouse button.
4. Draw a line to the right a half inch along the top edge of the frame.

Repeat those steps until you've drawn a vertical line about an inch long at the point directly under the 7-inch mark. Then double-click the mouse button. When you do, handles appear around the perimeter of the entire polyline figure.

You can expand the polyline figure all at once. Position the pointer on one of the handles at the bottom edge of the polyline figure and drag the outline that appears down as far as you can. Then scroll to the lower half of the frame and repeat the process until the bottom edge of the polyline figure coincides exactly with the bottom edge of the frame.

The result is what appear to be nine separate lines dividing the frame into segments.

Selecting a Tool for Repeated Use

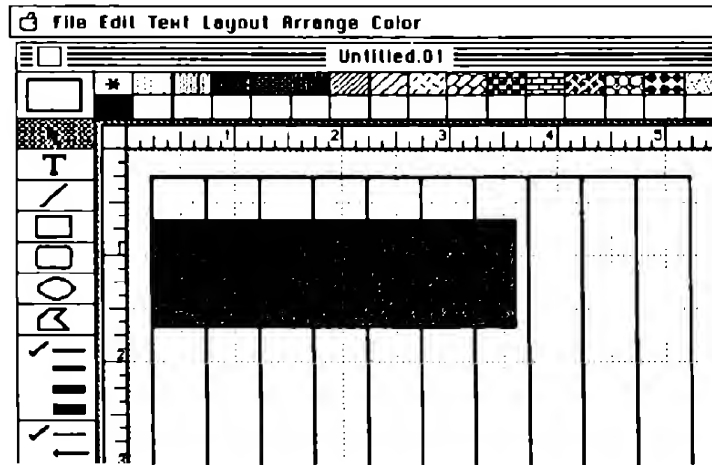
You may have noticed that after you've selected a tool and used it once, *Draw Plus* automatically turns the tool off and selects the pointer. You can use a tool more than once without selecting it each time if you select it by double-clicking its icon.

Point to the rectangle icon in the tool palette, and double-click the mouse button. Notice that the background doesn't change to gray. Instead the icon is highlighted.

You can now use the rectangle tool to draw three bars on the bar graph without having to select the rectangle tool separately for each bar.

To draw the first bar, select a color for it, then move the pointer to the left edge of the frame at the spot even with the 2 1/2-inch mark on the left ruler. Hold down the mouse button, and drag the rectangular outline down and to the right, like this:

At the Drawing Board



The bar should be one inch wide, so the bottom edge of the rectangle should be even with the 3 1/2-inch mark on the left ruler. Don't worry about the length of the rectangle right now – you can adjust it later.

Repeat the process for the other two bars. Start the second rectangle on the left edge of the frame at the point that's even with the 4-inch mark on the left ruler, and align its bottom edge with the 5-inch mark. Start the third rectangle at the point even with the 5 1/2-inch mark, and align its bottom edge with the 6 1/2-inch mark.

In Chapter 4, "Adding Text," you'll add labels to the graph. But first read the next chapter; it explains how to save what you've done so far.

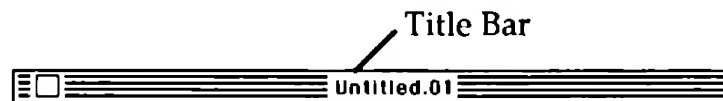


Chapter 3

Saving, Getting, and Printing Drawings

Saving a Drawing

You can save a drawing any time you want. Saving a drawing is necessary because the image of the drawing on the screen lasts only as long as the computer is on. If you turn the computer off without saving the drawing, you'll lose it. When you save a drawing, a copy of it is stored on a disk (the original remains on the screen until you open another picture or quit). The copy stays on the disk until you erase or replace it. Later on, you can have the computer get the drawing from the disk and redisplay it on the screen. In a moment you're going to save the drawing that's in the drawing window. Before you do, take a look at the *title bar* (it's at the top of the drawing window).



The name that appears there is **Untitled.01**. *Draw Plus* supplied the name automatically when you started the program. You can give the drawing a better name when you save the drawing.

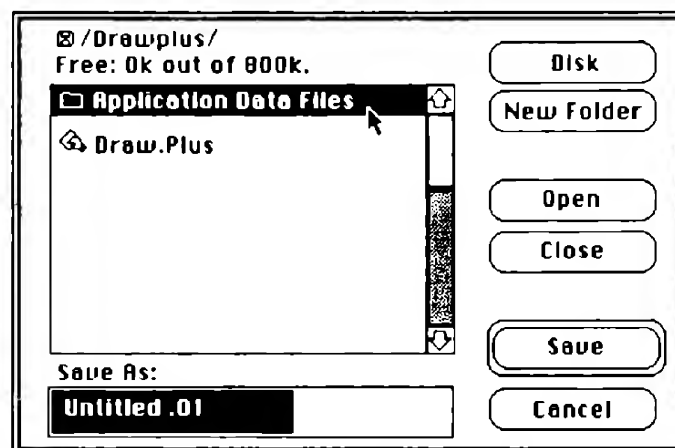
Choose **Save** from the **File** menu. The difference between **Save** and **Save As** is that **Save As** always gives you the chance to give a drawing a new name. **Save**, on the other hand, only lets you give a drawing a name the first time you

Saving, Getting, and Printing Drawings

save it; after that **Save** saves the drawing automatically with the name it already has.



A dialog box appears.



Saving, Getting, and Printing Drawings

In the space under **Save As**, you type a name for the drawing you're saving. **Untitled.01** appears there now.

Always give a new drawing a new name before you save it. Remember that each time you start *Draw Plus*, an empty drawing window with the name **Untitled.01** appears on the screen.

The name that appears in the space below **Save As** is always selected – as **Untitled.01** is – so that you can replace it just by typing a new name.

Type **BarGraph**. It replaces **Untitled.01**.

Notice the **Cancel** button in the lower right corner of the dialog box. You can't use **Undo** to "unsave" a drawing once *Draw Plus* has started to save it (in fact, you can't undo any of the commands on the **File** menu once *Draw Plus* has started to carry out the command). Instead, you use the **Cancel** button to leave the dialog box without carrying out the **Save** command.

Draw Plus takes up most of the space on the program disk, so it's best to save pictures on a different disk. Before you save a drawing, first eject the *Draw Plus* disk from the drive and replace it with another initialized disk. Or if you have a second disk drive, put another disk in it. (If you need instructions on how to initialize a disk, see your Apple II GS owner's guide.)

To switch disks:

If you have just one disk drive, first press the button on the disk drive to eject the *Draw Plus* program disk and replace it with an initialized disk. Then point to the **Disk** button in the **Save As** dialog box, and click the mouse button.

Saving, Getting, and Printing Drawings

If you have a second disk drive, put a formatted disk in it and click the **Disk** button. In a moment, the catalog in the **Save As** dialog box lists the files on the drawing disk (if there are any).

To save **BarGraph**, click the **Save** button. The wristwatch icon replaces the pointer for a moment while *Draw Plus* saves the drawing. When the pointer reappears, you can continue working in the drawing window.

Once you've saved a drawing, you can use **Save** rather than **Save As**. The **Save** command assumes that you want to replace the old version of a drawing with a new version. If you want to save different versions of a drawing, use **Save As** and give each version a different name.

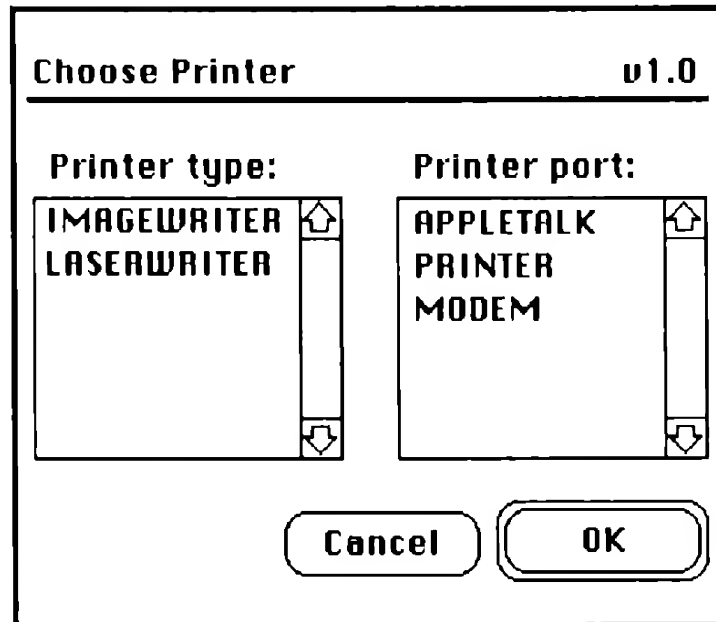
Printing a Drawing

Once you've finished a drawing, you'll want to print a copy of it. But before you print for the first time, you have to let *Draw Plus* know what type of printer you have connected to your computer and which port the printer is connected to.

Note: If you're using AppleTalk, see "Choose Printer" in the "Reference" section for important information.

Saving, Getting, and Printing Drawings

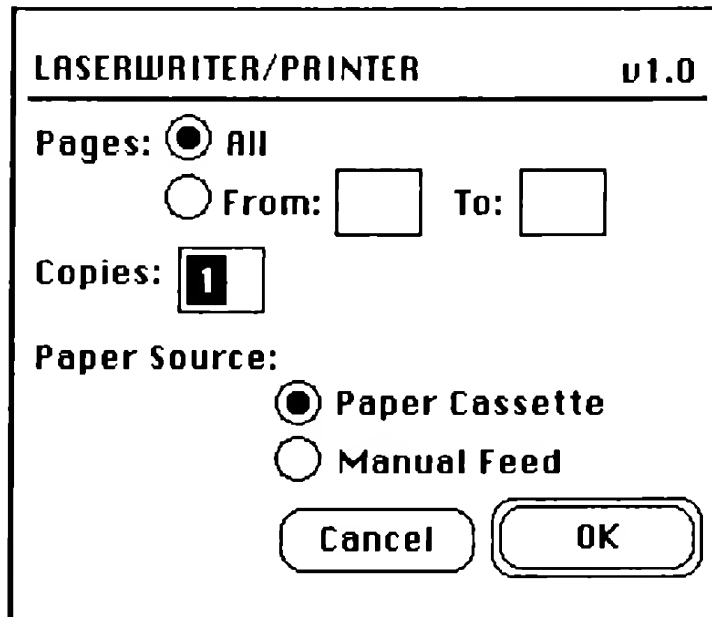
Select **Chooser Printer** from the **File** menu. This dialog box appears:



If the printer type and the printer port selected match your system, click **OK**. If not, point to the correct printer and port and click the mouse button. When you've selected the printer and port you want, click **OK**. *Draw Plus* saves the selections that you've made on the program disk, so make sure the write notch on the disk is covered.

Saving, Getting, and Printing Drawings

To print a drawing, you choose **Print** from the **File** menu. A dialog box that looks something like this appears:



The dialog box is titled "LASERWRITER/PRINTER" in the top left and "v1.0" in the top right. It contains the following options:

- Pages:** A radio button labeled "All" is selected. Below it are two empty text boxes labeled "From:" and "To:".
- Copies:** A text box containing the number "1".
- Paper Source:** Two radio buttons: "Paper Cassette" (selected) and "Manual Feed".
- At the bottom are two buttons: "Cancel" and "OK".

The options in the dialog box differ depending on whether you're using an ImageWriter or a LaserWriter. If you want detailed information about the options in the Print dialog box, see the "Reference" section.

To print **BarGraph**, first make sure your printer is connected to the computer, turned on, and on line. Choose **Print** from the **File** menu. Leave all the options displayed in the dialog box set as they are. Click **OK**. **BarGraph** is printed, and the dialog box disappears from the screen.

Closing a Drawing

To remove a drawing from the screen, you *close* the drawing window. Closing the drawing window doesn't save the

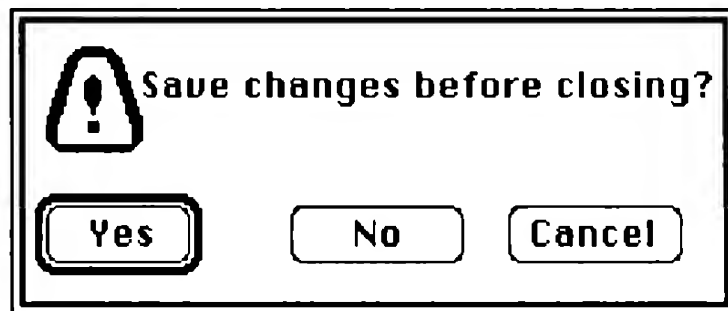
Saving, Getting, and Printing Drawings

drawing that's there. If you want to keep the drawing, you have to save it first.

You close the drawing window by choosing **Close** from the **File** menu. If more than one window is open on the screen, **Close** closes the one that's active (the active window is the one in front of all the others; four horizontal lines appear in its title bar). If you haven't made any changes to the drawing since you last saved it, the window closes immediately.

But if you've changed the drawing in some way, the process is different. To find out how the process is different, change the rectangle that frames the graph from transparent to white:

First select the rectangle (point to the right edge of the frame and click the mouse button). Then point to the white box in the color/pattern palette and click the mouse button. The rectangle changes from transparent to white.



Now choose **Close** from the **File** menu. A dialog box appears that asks if you want to save the changes you've made.

If you click **No**, the drawing window disappears from the drawing board, and the changes aren't saved.

If you click **Cancel**, the drawing window reappears just as it was before you clicked the close box.

If you click **Yes**, the new version of the drawing is saved, and the drawing window disappears.

Click **Yes**.

After *Draw Plus* has saved **BarGraph** in its new form, choose **Close** again. The drawing window containing **BarGraph** disappears.

Starting a New Drawing

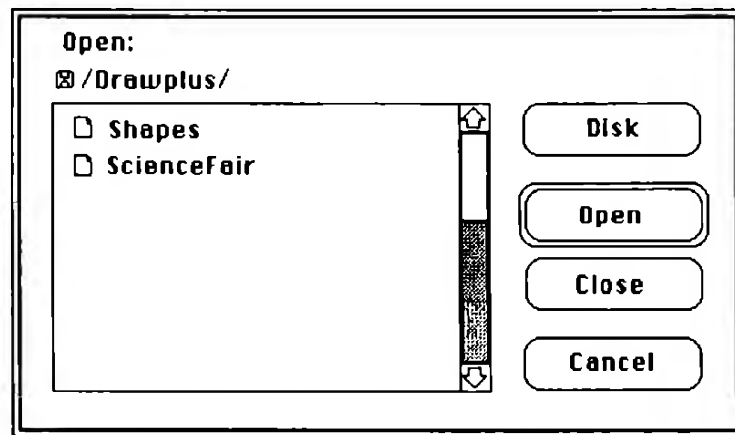
When you want to start a new drawing, you choose **New** from the **File** menu. **New** gives you a drawing window labeled “Untitled” just like the one that appeared when you started *Draw Plus*. No matter what changes you’ve made to the drawing window you were most recently working in, all the settings for the new drawing window are the same as those for the original drawing window.

Choose **New** from the **File** menu to open a new drawing window. *Draw Plus* gives it the title **Untitled.02** automatically.

Opening a Drawing

To get back a drawing you've saved on a disk, you *open* the drawing.

Choose **Open** from the **File** menu. Then the Open dialog box appears.



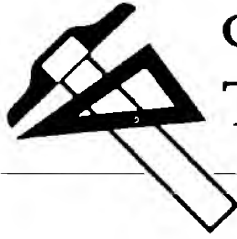
In the left half of the box is a list of the names of the documents and other files on the disk. The list is called a *catalog*. If a catalog has more names listed on it than can fit in the window, you can scroll the list up and down to see all the names.

Choose **BarGraph** from the list and click **Open**. The dialog box disappears, the wristwatch icon replaces the pointer for a moment, then the bar graph drawing appears on the screen again.

The new drawing window, **Untitled.02**, that you opened in the last section hasn't been erased by **BarGraph**. **Untitled.02** is still on the drawing board, but it's behind **BarGraph**. To see it, point to **BarGraph**'s title bar, and hold down the

mouse button. An outline appears around the drawing window. Drag the outline that appears down a little (just as if you were moving an object in the drawing window). Release the mouse button. The drawing board is redrawn with the top of **Untitled.02** showing above **BarGraph**.

The next chapter, "Text, Titles, and Labels," explains how to add text to the bar graph. If you want to quit rather than go on, choose **Quit** from the **File** menu. You can come back to this section if you need help opening **BarGraph** before you start Chapter 4.



Chapter 4

Text, Titles, and Labels

This chapter explains how to use text in the drawings you create with *Draw Plus*. *Draw Plus* lets you work with text normally, and it also has special features that let you create titles and labels easily.

If you quit *Draw Plus* at the end of the last chapter, start it again and open **BarGraph**.

Fonts and Font Styles

A *font*, or typeface, is a complete set of letters, numbers, and punctuation marks that has a characteristic appearance. This guide, for example, is set in a font called Palatino. *Draw Plus* has many different fonts – each in several sizes – that you can use in your drawing.

A *font style* is created by changing a font in a specific way. For example, if all the characters in a font slant, the style is called *italic*. If all the characters are made thicker and darker, the style is **bold**. Font styles are different from fonts in that you can use more than one style at a time. For example, you can have text that's both *bold and italic*.

Adding Text



You add text to a drawing by first selecting the text icon and positioning the pointer on the screen at the place where you want the text to start. You then click the mouse button to display the *cursor*. The cursor is a special pointer that moves along to the right of text as you type it; the cursor shows you where the next letter you type is going to appear. When you're finished typing text, you can either press *enter* to accept the text, or select another tool.

BarGraph needs two sets of labels: one to identify the segments the chart is divided into and one to identify the bars themselves.

Before you add the sets of labels, turn off the grid. You'll find it much easier to position text when the grid is off. To turn the grid off, select **Turn Grid Off** from the **Layout** menu. Then select the text icon from the tool palette.



Notice that when you move the pointer to the drawing window, it looks like an I.

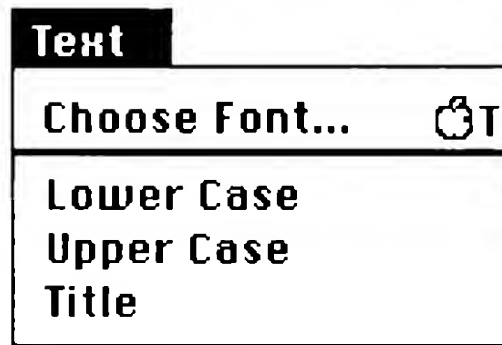
Move the I anywhere in the area above the bar graph and click the mouse button. Move the pointer away, and you'll see a blinking vertical line. That's the cursor.

Type **10**, then select the pointer from the tool palette. Point to **10** and click the mouse button. As soon as you do, handles appear around **10**, showing you that it's selected.

Changing Fonts

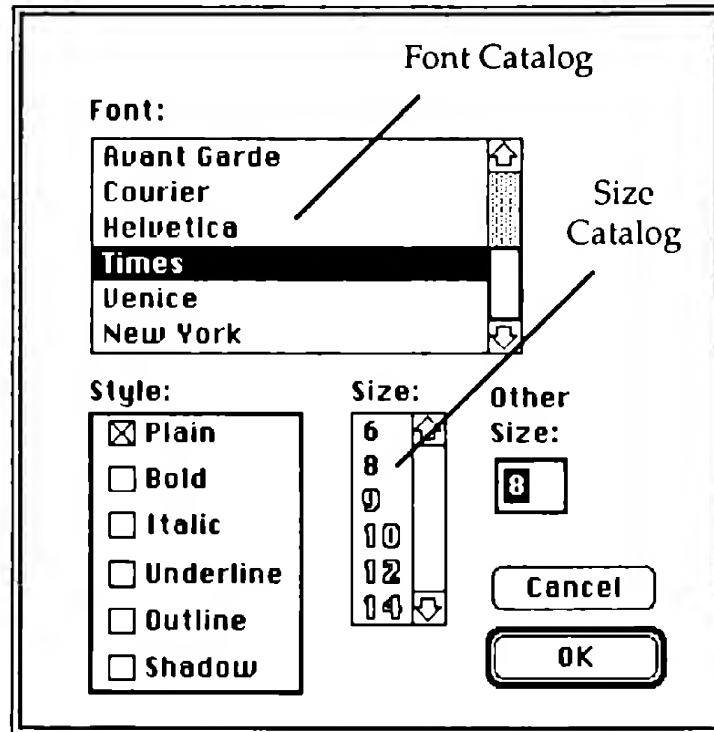
If there's text already on the screen, you can change the font it's displayed in; or you can choose a new font for text you're about to type. If you want to change text that's already on the screen, you have to select the text before you choose the new font you want it to appear in. If you want to type text in a new font, first select the text tool, then choose the new font and start typing.

To choose a new font, you start by selecting **Choose Font** from the **Text** menu (**Choose Font** lets you choose not only a font, but also the size and style you want *Draw Plus* to display it in).



Text, Titles, and Labels

This dialog box appears:



You choose a font from the dialog box by scrolling through the font catalog and selecting the one you want. You then click OK.

The new font takes effect immediately, appearing in the same size and style as the old font. If the new font isn't available in the same size, *Draw Plus* scales it up or down to the size of the old font. If you don't like the result, you can select a different size (see the next section, "Changing Size and Style").

The text you just typed is in a font called Shaston. Change it to Times. Here's how:

Select the text if it isn't still selected, then select **Choose Font** from the **Text** menu. The Choose Font dialog box appears. Find **Times** in the list under **Font**, point to it, and click the mouse button. Then click **OK**.

The dialog box closes, and *Draw Plus* immediately changes the font **10** is displayed in to Times.

Changing Size and Style

You can change the style and size text is displayed in, like the font it's displayed in, either before or after you type the text.

To change size, you first select **Choose Font** from the **Text** menu. When the Choose Font dialog box appears, you set the new size of the font either by selecting a number from the size catalog or by typing a number in the box below **Other Size**. The numbers that appear in the size catalog are the sizes that the font you've chosen looks best in. If you type a different number in the **Other Size** box, *Draw Plus* scales the font up or down to the size you want, but you might not be satisfied with the way the results look. When you've chosen the size you want, you click **OK**.

Change the size **10** is displayed in to 12:

Once again, first select **10** if it isn't still selected. Then select **Choose Font** from the **Text** menu. When the dialog box appears, select **12** from the size catalog, and then click **OK**. The dialog box closes, and *Draw Plus* changes **10**'s size to 12.

(The next section, "Positioning Text," explains how to position **10** next to the graph.)

Text, Titles, and Labels

To choose a new style, you first select **Choose Font** from the **Text** menu. When the Choose Font dialog box appears, you choose the style you want by clicking the check box next to it. You can use all of the styles except **Plain** at the same time; **Plain** cancels any other styles you select. You can also cancel a single style by clicking the check box next to it a second time. When you've chosen the style (or styles) you want, click **OK**.

Note: The Shaston font, which is already selected when you begin, can't be underlined. Be sure to choose another font if you want to underline text in a drawing.

Try adding a label – in a different size and style – to identify the first bar in the graph:

First select the text tool, then select **Choose Font** from the **Text** menu. When the dialog box appears, select **Times** from the list of fonts, then point to the check box next to **Bold** and click the mouse button. Finally, select **24** from the size catalog, and click **OK**.

When the dialog box is gone, select the text icon. Position the **I** to the left of the first bar, along the ruler line below the 1-inch mark. Click the mouse button, and type **Linda**.

Positioning Text

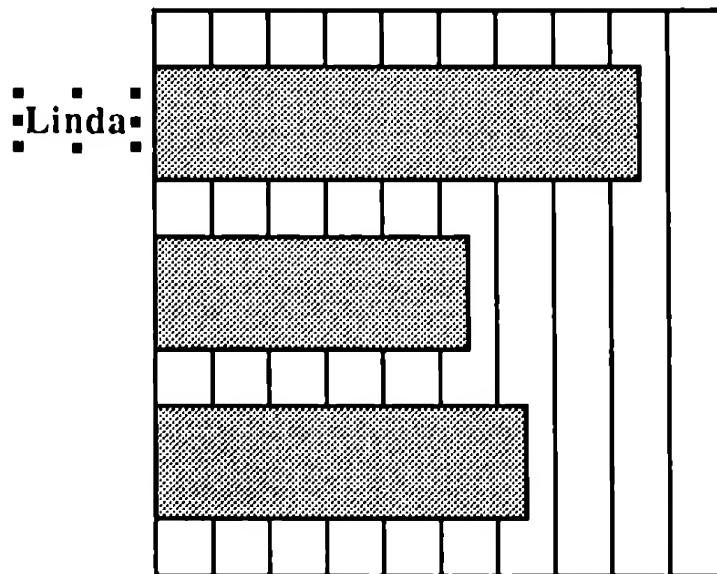
Text doesn't have the clean edges that graphic objects have, so when you're adding text to a drawing, it's usually easiest to type the text, then position it.

To position text, you first select it, then point to it, and hold the mouse button down. A rectangular outline appears. You drag the outline to the place where you want the text to appear and then release the mouse button.

Position the label **Linda**:

Select the pointer from the tool palette, position the pointer in the middle of the text, and hold down the mouse button. Handles appear around the text.

Move the pointer slightly, and a rectangular outline appears. Move the outline until it's centered to the left of the first bar, like this:

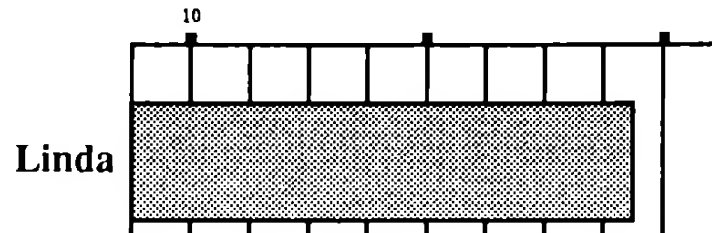


When you have the outline positioned, release the mouse button. *Draw Plus* repositions the text immediately.

Label the other bars **Mark** and **Terry**.

Text, Titles, and Labels

Reposition **10** the same way. It goes directly above the graph's first segment line, like this:



Make separate labels (20, 30, and so on) for each of the other segment lines and position them the same way. (Remember the segment labels are in Times 12 Plain.)

Lengthen Linda's bar so it represents 68%. Lengthen Mark's to 83%, and Terry's to 75%.

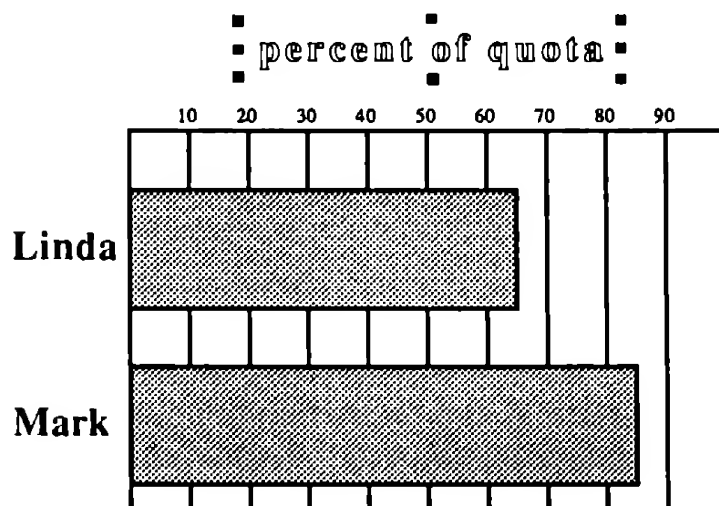
Adding a Title

You can choose **Title** from the **Text** menu to automatically capitalize text as a title.

Try it:

Select the text tool, then select **Times, 24, Bold, and Outline** from the Choose Font dialog box. Position the **I** above the bar graph. Type **percent of quota**.

Next, select the pointer from the tool palette, select the text you just typed, and center it over the graph, like this:



Then choose **Title** from the **Text** menu. *Draw Plus* immediately capitalizes the first letter in each word in the text.

Save **BarGraph**.



Chapter 5

Handling Objects

It's much easier to create a drawing if you can move parts of it around, make copies of objects that you want to use more than once, change the shape or orientation of an object, and so on. You can do all those things with *Draw Plus*, but only if you've first selected the object you want to work with.

Selecting Objects

The simplest way to select an object is to point to it and click the mouse button. There are three other techniques you can use, and you can use them to select not just one object, but several objects simultaneously.

The Selection Box

The selection box lets you select all the objects in a rectangular area of a drawing and then cut them, copy them, move them, change their orientation, save them, move them from one drawing to another, or stretch or shrink them.

You position a selection box the same way you position a rectangle: you move the pointer to the upper left corner of the area where the objects you want to mark are located. You then hold down the mouse button and drag the box down and to the right until it contains the entire area you want to select. When you release the mouse button, the dotted outline of the box disappears, and handles appear on all the objects the box surrounded.

Handling Objects

Open the drawing named **Shapes** on the *Draw Plus* program disk. The drawing window contains three objects: a square, a circle, and a triangle.

Use the selection box to select all three objects:

Select the pointer from the tool palette, and position it above and to the left of the square. Hold down the mouse button, and drag the mouse down and to the right until the rectangular outline that appears surrounds all three objects. Release the mouse button, and handles appear on all three objects.

While all three objects are selected, you can treat them as if they're a single object. For example, try moving one of them, and you'll see that all three of them move. Select a color or pattern, and all three of them are filled with the color or the pattern. (You can group several objects together permanently with the **Group** command, which is explained later in this chapter.)

The Shift Key and the Mouse Button

You can select more than one object at a time by pointing to each one and holding down *shift* while you click the mouse button.

Try it with the square, circle, and triangle:

First, remove the selection handles from the three objects by clicking anywhere outside of them. Then select the square by pointing to it and clicking the mouse button. Next point to the circle, hold down *shift* and click the mouse button. Point to the triangle and do the same.

Once again, try moving any of the objects and you'll see that all three of them move together. Select a color or pattern, and all three of them are filled with the color or the pattern.

Select All

You can select all the objects in a document by choosing **Select All** from the **Edit** menu. When you use **Select All**, you select not only the objects that are visible in the drawing window, but also any other objects that are part of the drawing.

Remove the selection handles from the three objects by clicking anywhere outside of them. Then choose **Select All** from the **Edit** menu. Handles appear on all three objects. Scroll down an inch or two, and you'll see a parallelogram that's selected, too – even though it was outside of the drawing window.

Copying an Object

You can make a copy of any object or group of objects you've selected.

To make a copy of the triangle, first select it, then choose **Copy** from the **Edit** menu. **Copy** flickers and then the **Edit** menu closes. A copy of the triangle has been made on the *Clipboard*. The *Clipboard* is a separate page that's always available to hold objects you cut or copy. The copy of the triangle stays there until you copy or cut something else.

To add a copy of the triangle to your drawing, choose **Paste** from the **Edit** menu. **Paste** flickers, the **Edit** menu closes, and then a copy of the triangle appears in the center of the

Handling Objects

drawing window. The copy is automatically selected so you can move it wherever you want. When you have it positioned, click the mouse button anywhere outside the object to paste the copy in its new location.

To make another copy, choose **Paste** again.

Duplicating an Object

If you want to make a copy of an object and use it on the same part of the page the original is on, it's easier to use **Duplicate** instead of **Copy** and **Paste**.

To use **Duplicate**, you first select the object you want to make a copy of, then choose **Duplicate** from the **Edit** menu. **Duplicate** flickers, the menu closes, and a copy of the object you selected appears. It's automatically selected so you can move it wherever you want it.

Make another copy of the triangle using **Duplicate**.

Cutting and Pasting an Object

You can move an object (or a group of objects) from one part of a drawing to another by cutting and pasting it.

You start by selecting the object you want to move. Then you choose **Cut** from the **Edit** menu. **Cut** flickers, the menu closes, and then the selected object disappears. The object has been placed on the Clipboard.

Next, you move to the part of the drawing where you want the object to appear and choose **Paste** from the **Edit** menu. The object you cut earlier reappears. It's automatically

selected so you can position it. A copy of the object remains on the Clipboard until you cut or copy something else. You can paste as many copies of the object in the drawing as you want.

Try this:

Select the circle, then choose **Cut** from the **Edit** menu. The circle disappears from the drawing window. Scroll down the drawing, past the parallelogram, then choose **Paste** from the **Edit** menu. The circle reappears in the middle of the drawing window.

Moving an Object to Another Drawing

You can move an object (or a group) not only from one part of a drawing to another, but also from one drawing to an entirely different drawing.

You start by cutting or copying the object you want to move: you select it, then choose either **Cut** or **Copy** from the **Edit** menu. Then you open the drawing you want to move the object to (if the drawing is already open, you *activate* the drawing window it's in). Finally, you move to the part of the new drawing where you want to paste the object and choose **Paste** from the **Edit** menu. The object appears in the new drawing.

Try it yourself:

First, select the parallelogram, then choose **Copy** from the **Edit** menu. **Copy** flickers and then the **Edit** menu closes. A copy of the parallelogram has been made on the Clipboard.

Handling Objects

Next, choose **New** from the **File** menu. A new drawing window appears.

Choose **Paste** from the **Edit** menu. The parallelogram appears. It's automatically selected, so you can place it wherever you want on the page. When you have it positioned, move the pointer outside the selected area and click the mouse button.

Stretching an Object

It's possible to change the proportions of an object (or a group of objects) by stretching or compressing it. You can make an object narrower or wider, or taller or shorter. You cannot, however, stretch or compress an object along a diagonal.

Select the parallelogram if it isn't still selected. To stretch the parallelogram, position the pointer on the handle in the middle of the bottom edge of the parallelogram, and drag the bottom edge down. The bottom edge of the parallelogram moves down with the pointer, but the upper edge stays anchored in place.

You can also stretch the parallelogram by dragging the right edge right, the left edge left, or the top edge up. You shrink the parallelogram by dragging the bottom edge up, the right edge left, the left edge right, or the top edge down. You can also stretch or shrink the parallelogram in two directions at once by dragging one of the corners' handles.

No matter how you stretch or shrink the parallelogram, however, it remains a parallelogram. The next section explains how to change the shape of an object.

Reshaping an Object

You can reshape any object you've drawn with the polyline tool or with the arc tool.

To reshape an object, you first select it, then choose **Reshape** from the **Edit** menu. The selection handles disappear, and they're replaced by handles at the end of each line in the figure (or at each point where two lines in the figure meet). You then point to any of the handles, hold down the mouse button, and drag the handle to a new location. When you release the mouse button, you can point to another handle and repeat the process. When you're finished, you click outside the figure, and *Draw Plus* redraws the figure in its new shape.

Reshaping an arc is especially useful if you want to create a pie chart. You first draw an arc, then lengthen or shorten it until it's the right size for the segment of the chart it represents.

You can use **Reshape** to turn the parallelogram into a rectangle:

First, select the parallelogram if it's not still selected. Then choose **Reshape** from the **Edit** menu. Handles appear at the four corners of the parallelogram. Point to the lower right handle, hold down the mouse button, and drag the handle until it's directly under the upper right one. Release the mouse button.

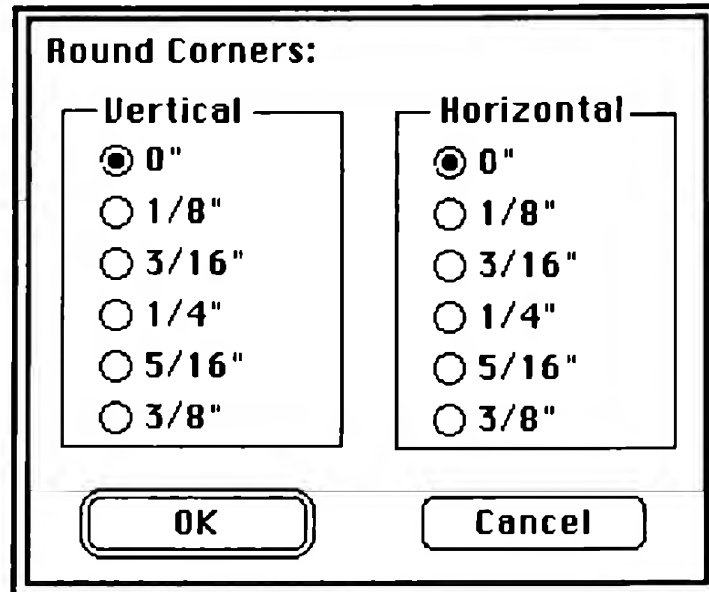
Next, point to the lower left handle, hold down the mouse button, and drag the handle until it's directly under the upper left one. Release the mouse button, then click outside the parallelogram.

Draw Plus redraws the parallelogram as a rectangle.

Rounding Corners

You can round the corners of any rectangle you draw with the rectangle tool (but you can't round the corners of a rectangle you draw with the polyline tool). You can also change the corners of any rounded rectangle you draw with the rounded rectangle tool.

To round the corners of a rectangle, you first select the rectangle, then you choose **Round Corners** from the Edit menu. The Round Corners dialog box appears:



The settings under **Vertical** let you choose how far below the top edge of the rectangle and how far above the bottom edge you want roundness to start. The settings under **Horizontal** let you choose how far in from the left or right edge you want roundness to start. In both cases, the farther from the edge, the rounder the corners are.

You choose the settings you want, then click **OK**.

To try **Round Corners**, first choose **Close** from the **File** menu to close the drawing with the parallelogram in it. When the message box appears that says **Save changes before closing?**, click **No**. The drawing window closes and **Shapes** reappears.

Scroll down the drawing and you'll see two large rectangles. The one on the left was drawn with the rectangle tool, the one on the right with the rounded rectangle tool.

Select the rectangle on the left, then choose **Round Corners** from the **Edit** menu. The **Round Corners** dialog box appears. Experiment with different settings (you may have to click outside the rectangle to remove the handles so you can see the effect). Notice how much more rounded you can make the corners of a rectangle using **Round Corners** rather than the rounded rectangle tool.

Changing the Stacking Order

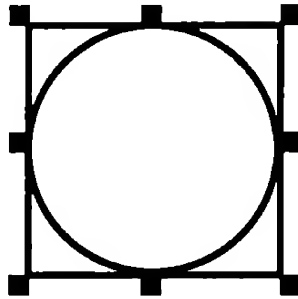
You may have noticed that you can move one object on top of another, and yet the two objects still remain separate. It's actually possible to lose a small object behind a larger one. *Draw Plus* has two commands, **Move to Front** and **Move to Back**, you can use to change the order in which objects are stacked.

To move an object to the front of a stack, you select it (if you can) and then select **Move to Front** from the **Arrange** menu. If you can't select the object because it's hidden, you select the object on top of the stack and then select **Move to Back** from the **Arrange** menu. You can repeat the process as many times as you need until you can get to the object you want.

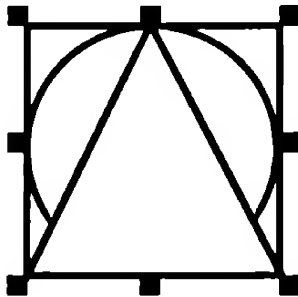
Handling Objects

Try this experiment:

Scroll back to the top of **Shapes**, and move the circle in front of the square, like this:



Then move the triangle in front of the other two, like this:



You can still see at least part of each of the three objects, and as long as you can see an object, you can select it.

Move the square to the front: Point to either of the two small parts of the square that you can see and click the mouse button. The selection handles appear around the edges of the square. Choose **Move to Front** from the **Arrange** menu. **Move to Front** flickers, the **Arrange** menu closes, and the square is redrawn at the front of the stack.

Although you can still see the triangle, the circle is completely covered - and that means that you can't select it.

There are several different ways you can move the circle to the front of the stack. Here's the quickest:

Select the square if it isn't still selected. Next, point to one of the corners of the triangle you can see, hold down *shift*, and click the mouse button. Both the square and the triangle are selected. Choose **Move to Back** from the **Arrange** menu.

As soon as the **Arrange** menu closes, the stack is redrawn with the circle in front.

Before you go on, move the triangle to the front of the stack.

Rotating Objects

You can select any object and rotate it a quarter turn left or right.

Make a copy of the triangle and then place the two triangles side by side. Select one of them, and choose **Rotate Left** from the **Arrange** menu. Notice how the triangle you selected has changed.

Leave the same triangle selected, and choose **Rotate Right** from the **Arrange** menu. The triangle returns to its original position. Choose **Rotate Right** again and notice how it changes.

Flipping an Object Horizontally

You can change an object to its mirror image by selecting it, then flipping it horizontally.

Handling Objects

Select the triangle you rotated right in the last section (if it isn't still selected). Choose **Flip Horizontal** from the **Arrange** menu. Notice that the triangle isn't moved, it's just replaced by its mirror image.

Flipping an Object Vertically

You can also select an object and flip it from top to bottom.

Select the other triangle, then choose **Flip Vertical** from the **Arrange** menu. Once again, the triangle isn't moved, it's just been replaced by an inverted triangle.

Grouping Objects

You can make two or more objects into a group and then treat them as if they were a single object. Objects that you make into a group stay grouped until you ungroup them (see "Ungrouping Objects," next).

Open **Shapes** again so you have a fresh set of objects to work with (you can have two copies of the same drawing open at the same time).

Select the square, circle, and triangle either by drawing a selection box around them or by pointing to each and holding down *shift* while you press the mouse button. Then choose **Group** from the **Arrange** menu. Notice that handles appear around the entire group.

Trying moving any of the objects, and you'll see that all three of them move together. Select a color or pattern, and all three of them are filled with the color or the pattern.

The difference between objects grouped with the **Group** command and objects grouped with the selection box is that objects grouped with the **Group** command remain grouped until you ungroup them with the **Ungroup** command. Objects you group with the selection box alone remain grouped only until you select another object or tool.

Ungrouping Objects

You can ungroup a set of grouped objects so that you can handle each of the objects individually.

Select the group you just created and then choose **Ungroup** from the **Arrange** menu. Selection handles appear on each of the objects. But try moving one of them, and you'll see that they're still temporarily grouped – just as if you'd grouped them with the selection box.

To completely detach them from each other, click somewhere outside of each of the objects, then select the one you want to work with.

Locking and Unlocking Objects

You can lock an object to prevent it from being accidentally moved or changed. Once an object is locked, you can change it or move it only if you unlock it first.

Select the square, and then choose **Lock** from the **Arrange** menu. Try to move the square. As soon as you try, a message box appears that says **The selection is locked**. Click **OK** to go back to the drawing window.

To unlock the square, select it and then choose **Unlock** from the **Arrange** menu.

Aligning Objects to the Grid

There are many reasons you may want to work with the grid turned off. For example, one major reason is that you can draw only objects of a certain size with the grid on. Nonetheless, once you've done work with the grid off, you can turn it back on and align objects with it.

Turn the grid off and do two things: Select the square and move it so that it's slightly out of alignment with the ruler lines. Select the triangle, choose **Reshape** from the **Edit** menu, and make the shape of the triangle slightly irregular.

Turn the grid back on, select the square, then choose **Align to Grid** from the **Arrange** menu, and you'll see the square realign itself with the ruler lines automatically.

Then select the triangle and choose **Align to Grid** again. The change is more subtle. What has happened is this: the handles in the four corners have each realigned themselves with the nearest point on the grid, reshaping the triangle slightly.



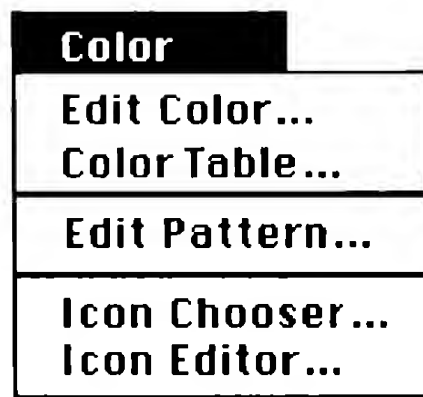
Chapter 6

Advanced Techniques

Changing Patterns

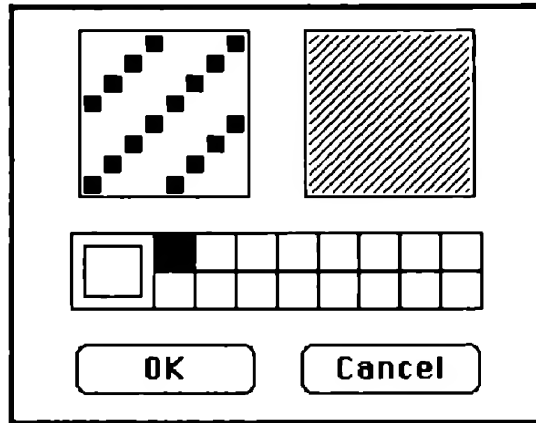
You can change any of the patterns in the palette, and you can also add color to any of them.

You start by selecting the pattern you want to change. Then you choose **Edit Pattern** from the **Color** menu.



Advanced Techniques

This dialog box appears:



The window on the left is the working window – where you make changes to the pattern; the window to the right of it shows you what the pattern will look like in the picture. Below the windows is a color palette. You choose a color from it just as you do from the main palette.

You use the pointer to edit a pattern. If you position the pointer on a pixel and click, the pixel disappears; if you move the pointer to an empty spot or to a place where there's a pixel of a different color and click, a pixel of the color you've selected appears. You can also draw a line in the color you selected by positioning the pointer where you want the line to start, then holding down the mouse button and dragging the pointer.

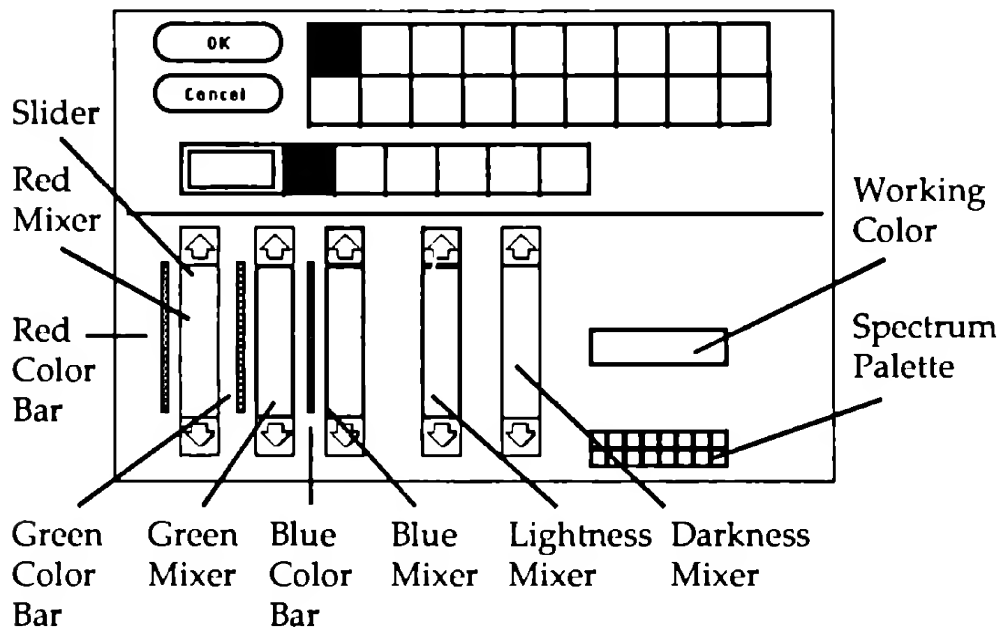
When you finish making changes, click the **OK** button. If you decide you don't want to keep the changes you've made, click **Cancel** instead.

Choosing Colors for the Palette

The color palette contains 16 colors for you to use. If you want to use colors different from the ones now in the palette, you can choose others from the 4096 colors that *Draw Plus* can produce.

To choose a new color, choose **Edit Color** from the **Color** menu.

The dialog box shown below appears:



If you're working in low resolution, the palette across the middle of the dialog box has 16 colors in it. If you're working in high resolution, the palette has only 4 colors (plus black and white), but *Draw Plus* displays what appear to be 16 colors in the palette in the drawing window. They're not 16 true colors – they're actually just a mixture of the 4 basic colors.

Advanced Techniques

The five vertical bars of color in the lower half of the screen are the color mixers.

The three on the left each control one of the primary colors. The one on the left is for red, the one in the middle for green, and the one on the right for blue. Notice that next to each of them is a color bar that shows the range of the intensities available, from brightest to black.

The two mixers on the right side of the dialog box control the shade – the lightness or darkness – of a color. The mixer on the left makes the color lighter, the one on the right makes it darker.

The working color reflects the positions of the sliders on the mixers. Every change in the position of the sliders produces a different color.

You can move the sliders up and down to change the amount of red, green, and blue in the working color or to lighten or darken it.

The spectrum palette in the lower right corner displays the basic spectrum of colors: the primary, secondary, and neutral colors (brown, gray, white, and black).

The easiest way to scan the colors available is to do this:

First, position the pointer on the color in the spectrum palette that's closest to the color you want (for example, if you want khaki, position the pointer on brown). Hold down the mouse button. A dotted outline appears around the color. Drag the dotted outline to the working-color box and release the mouse button. The color in the box changes to the color you've selected from the spectrum palette, and the sliders on the mixers take their positions for that color.

Each of the mixers shows 16 different variations on the color you've selected. For example, the green mixer shows 16 variations with more or less green mixed in. The lightness and darkness mixers show variations with more or less white mixed in.

If you don't see the color you want, position the pointer on the variation closest to it, and drag the variation to the working-color box. When you release the mouse button, a different set of variations appears.

If you're working in low resolution, there's a window in the upper half of the screen. If you want to see what a color looks like on your drawing, move the pointer to the window. The pointer turns into a paintbrush, and you can draw on the picture there with perfect safety – whatever you draw is automatically undone when you return to the drawing window.

If you're working in high resolution, a palette containing the 16 mixed colors appears in the upper half of the screen. As you change the 4 basic colors, the colors in the upper palette change to show you the effect on the 16 mixed colors.

When you've found the color you want, position the pointer on it and hold down the mouse button. Drag the dotted outline to the palette across the middle of the screen and replace one of the colors there with the new color. Make sure you replace a color you haven't used in the picture because the old color will be replaced by the new color everywhere you used it in the picture.

There are two changes to be wary of: changing the colors at the two ends of the palette – the colors preset to black and white. If you replace white with another color, that color instantaneously replaces white as the background color of the palette. Don't replace it with black or the screen becomes

Advanced Techniques

unreadable. Something similar happens if you replace black with another color. That color instantaneously replaces black as the text and outline color of the palette. Don't replace it with white. If you happen to replace either color with a color that makes the screen unreadable, press the *esc* key to undo the change.

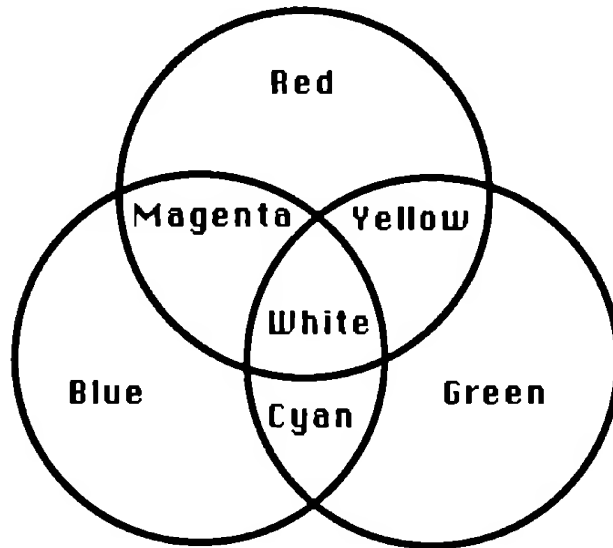
When you've made all the changes to the palette you want to make, click **OK** to go back to the drawing window. If you want to return to the drawing window without keeping any of the changes you've made, click **Cancel**.

The new palette is saved when you save the picture you're working on. You can also save the palette separately in the **Color Table** (see "Color Table" under "Color" in the "Reference" section for instructions).

If you'd like to mix a new color yourself, you can do that, too. Mixing colors is mostly a matter of experimenting until you get the mix you want, but it may help you to understand how the process works.

When you mix colors using *Draw Plus*, you're actually mixing light of different colors. Mixing light is different from mixing paint. The major difference is that if you mix all the colors of paint together, the result is black; when you mix all the colors of light together, the result is white.

As the color chart below shows, the three primary colors of light are red, green, and blue. Mixing red and blue produces magenta, mixing blue and green produces cyan, and mixing green and red produces yellow. Mixing all three together produces white.



To mix a color, move the sliders on the three color mixers up and down. You can move the sliders either by clicking the arrows or by dragging the slider with the pointer.

The mixers work like dimmers: if you move the slider to the bottom, you turn the color up as far as it can go; if you move the slider to the top, you turn the color off.

Try these experiments:

Turn up all the color mixers to their highest levels. The result is white. White light is made up of all the colors of the spectrum – all of which can be derived from the three primary colors, red, green, and blue.

Advanced Techniques

Turn up the red and green mixers all the way, and turn the blue mixer off. The result is yellow.

Turn the red, green, and blue mixers off. The result is black. Black is the absence of any light.

Don't confuse the brightness of a color with lightness. The brightest red is the reddest, most intense red. The lightest red is a little red mixed with a lot of white – in other words, a pale pink.

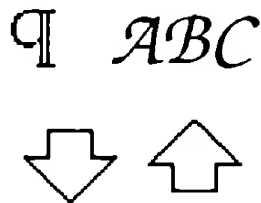
Turn the red mixer up all the way, and turn both the green and the blue mixers off. The result is the most intense red. The slider on the lightness mixer is at the very top, and the slider on the darkness mixer at the very bottom.

That's always the position they have when a color is most intense. Now move the sliders on the green and blue mixers up one notch each. The result is still red, but it's a slightly lighter red. You'll also notice that the slider on the lightness mixer moved down a notch. Keep moving the green and blue mixers up a notch at a time to see what happens.

You can, of course, make a color lighter by moving the slider on the lightness mixer, or darker by moving the one on the darkness mixer. And when you do, the sliders on the color mixers move in response. Of all the aspects of *Draw Plus*, the **Edit Color** is the richest in possibilities for experimentation. Remember, too, that you can mix color with black and white patterns and create new patterns using any (or all) of the 16 colors in the palette.

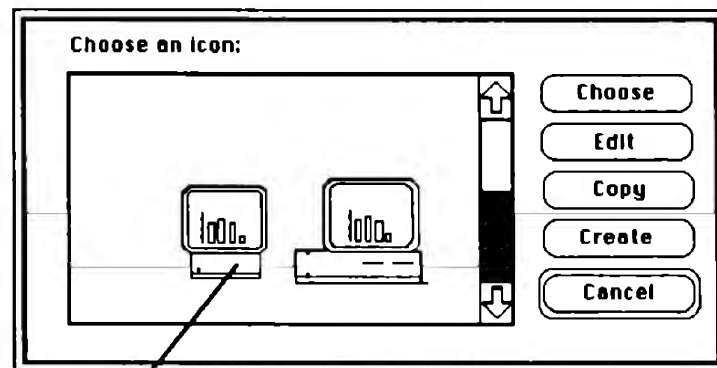
Creating and Using Icons

You can use the **Icon Chooser** first to create icons and then to select the ones you want to use in a drawing. An *icon* is usually a simple, small picture that stands for something else. You can also use **Icon Chooser** to create and use small pictures, like the ones below, that aren't true icons.



Creating an Icon

To create an icon, you first choose **Icon Chooser** from the **Color** menu. A dialog box appears.

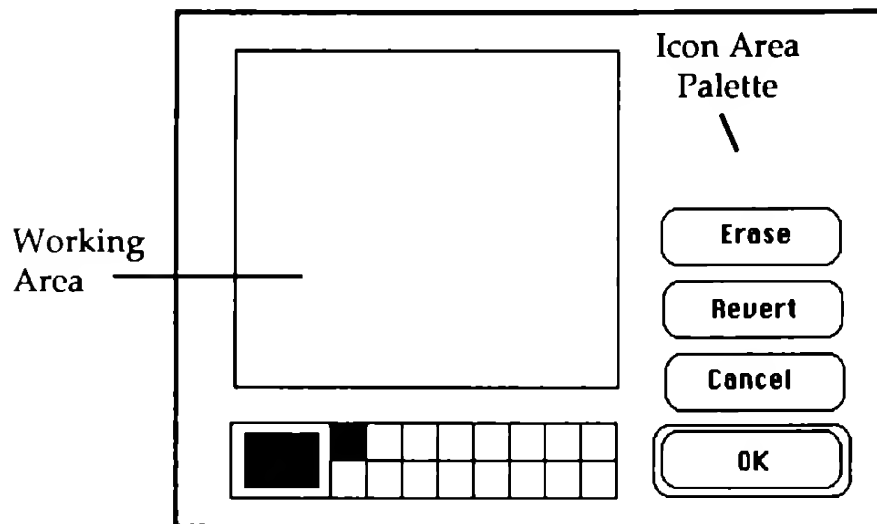


Icon Catalog Window

Advanced Techniques

Any icons that already exist appear in the icon catalog window. If there are more icons in the icon catalog than can fit in the icon catalog window, you can click the up and down arrows to scroll through the catalog. The icon that's selected has a box around it.

You next click the **Create** button to go to the Edit window. It looks like this:



The icon you're creating appears in the upper right corner of the screen as you create an enlarged version of it in the working area.

To draw, you select a color from the palette, point to the place in the working area where you want to draw a pixel, and click the mouse button (each square in the working area represents a pixel). If you want to draw a line or color an area, you hold down the mouse button while you move the mouse.

To erase, you select white and either point to a single pixel and click or hold down the mouse button while you move the mouse over the line or area you want to erase. To undo a change, you can either point to a single pixel and click or hold down the mouse button while you move the mouse over the line or area you want to change.

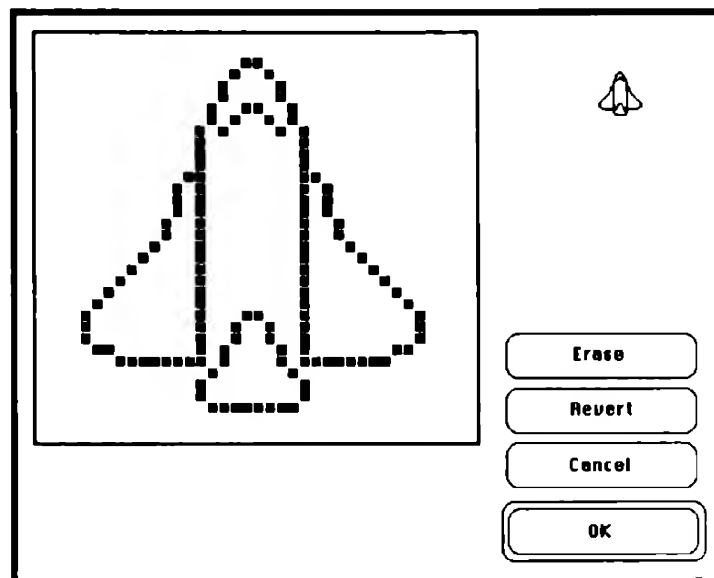
When you've finished the icon, click **OK** to save it and to return to the Icon Chooser dialog box.

Try creating an icon:

First, open the drawing named **ScienceFair** on the *Draw Plus* program disk. Icons are used in the drawing to indicate the kind of display each booth will have.

Select **Choose Icon** from the **Color** menu. When the Choose Icon dialog box appears, click the **Create** button. The Edit window appears.

Draw this simple representation of the space shuttle – it's the icon that represents space science at the science fair.



Advanced Techniques

Notice that as you draw the icon in the working area, the icon, as it will look in the drawing window, appears in the upper right corner of the Edit window.

When you've finished drawing the icon, click **OK**. The icon is added to the icon catalog.

Using an Icon

To use an icon, you first select it by pointing to it and clicking the mouse button. A box that marks it as selected appears around it. Next you click **Choose** to put a copy of the icon you've selected in the drawing window.

The Icon Chooser dialog box disappears, and the icon you've chosen appears in the upper left corner of the drawing window. The icon is automatically selected so you can work with it immediately.

You can treat an icon just like any other object, except you can't change its size by dragging its handles (the size of an icon does change, however, if you change the scale of the entire drawing).

Add the icon you just created to the science fair drawing:

If it isn't still selected, point to it and click the mouse button. Then click the **Choose** button.

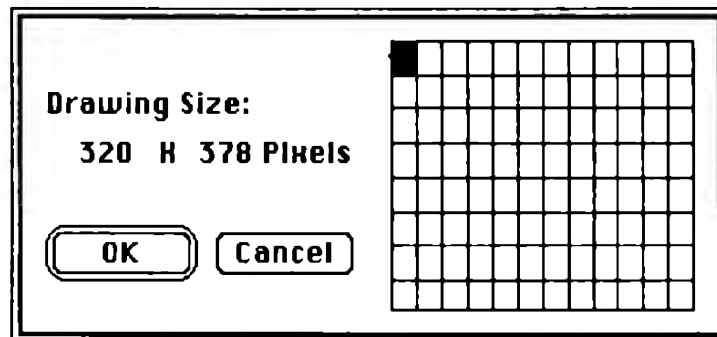
The Icon Chooser dialog box closes, and the shuttle icon appears in the drawing window. Move it down and position it in booth 8.

Changing the Drawing Size

You can change the size of the drawing you're creating. (*Draw Plus* doesn't change the size of objects or text on the drawing; instead, it changes the size of the area you have to work on.) The size of the drawing can be from 8 1/2 by 11 inches to 96 by 80 inches (*Draw Plus* never prints to the edges of a sheet of paper no matter how large the drawing is; the lines that mark the page breaks show you how much of a drawing is printed on one sheet).

To change the size of the drawing, you first select **Drawing Size** from the **Layout** menu.

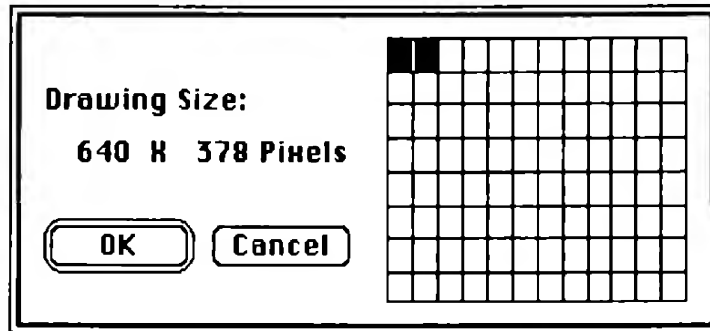
A dialog box appears.



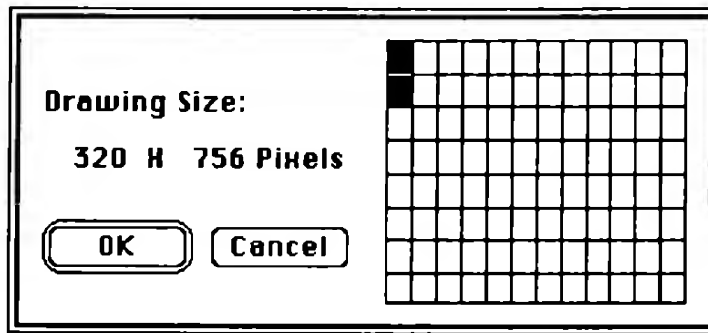
A square that's black is selected. The area marked by selected squares shows the current size of the drawing. Each square stands for a page; the size of the pages is determined by the type of page you've selected in the Page SetUp dialog box. For example, the grid above represents a drawing that's a single page in size.

Advanced Techniques

This one shows a drawing that's two pages wide and one page long:



This one shows a drawing that's one page wide and two pages long:



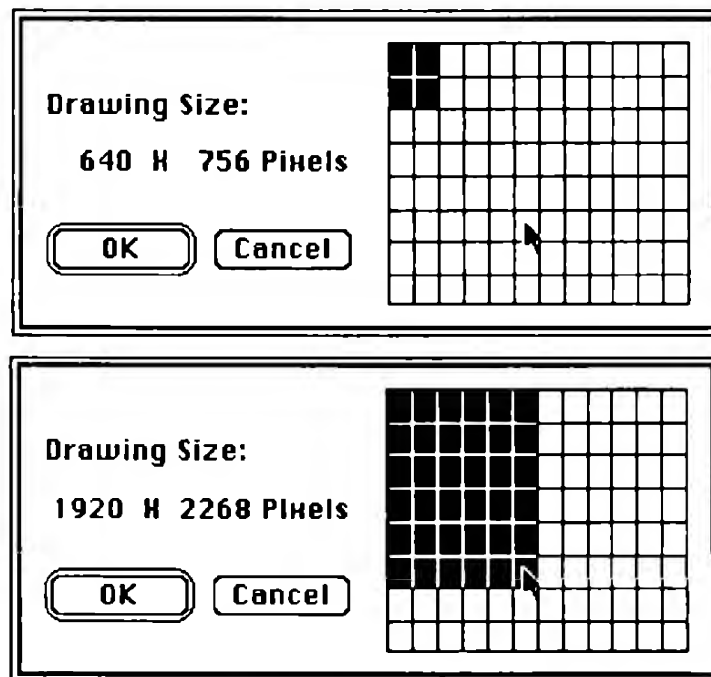
Each time you add a square to the right of the selected area, you add a page to the width of the drawing. Each time you remove a square, you remove a page from the width.

Each time you add a square at the bottom of the area that's selected, you add a page to the length of the drawing. Each time you remove a square, you remove a page from the length.

Advanced Techniques

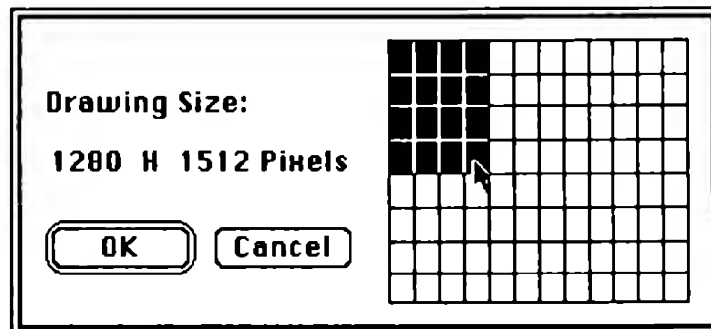
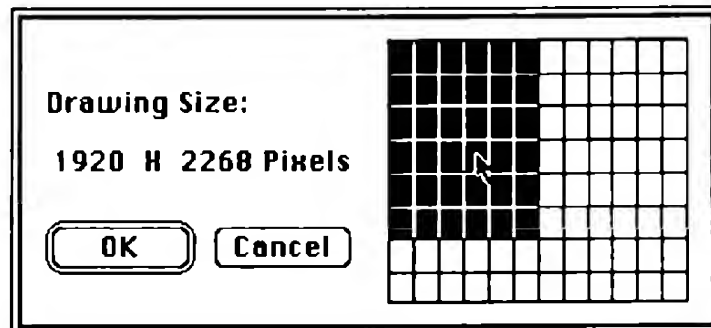
You can create a drawing that's up to 96 inches wide and 80 inches long.

To add a square, you point to it and click the mouse button. You don't have to select squares one by one. If you point to the square that's in the lower right corner of the total area you want to select and click the mouse button, the entire area is selected.

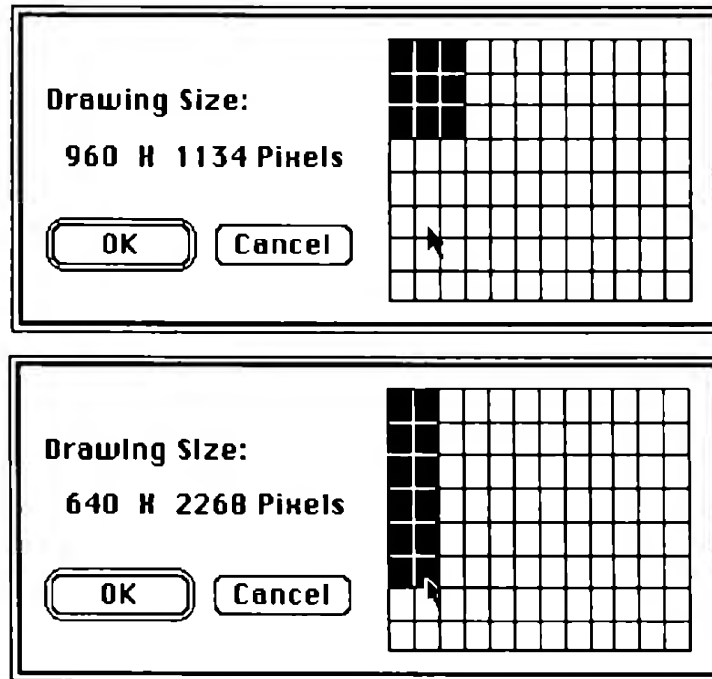


Advanced Techniques

To remove a square, you point to it and click the mouse button. You don't have to remove squares one by one, either. If you want to select an area that's smaller than the area currently selected, point to the square that's in the lower right corner of the area you want to select and click the mouse button. The smaller area stays selected, but any squares below or to the right of it return to normal.



You can use the same technique to make the selected area smaller along one edge and bigger along the other at the same time.



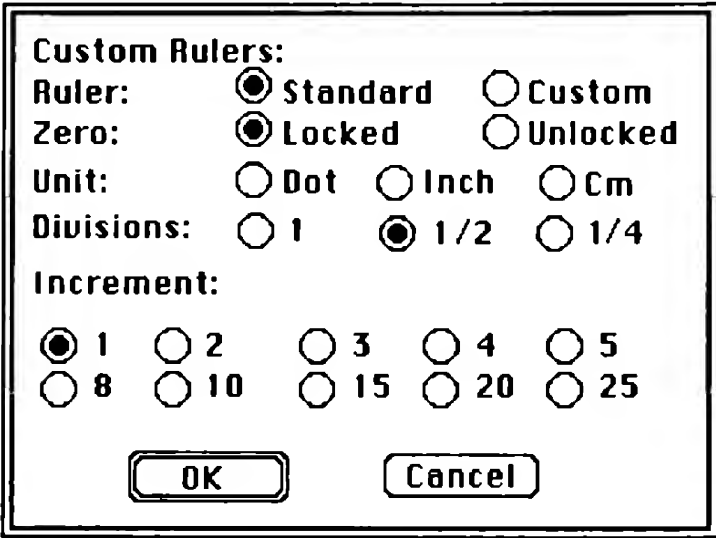
Open a new drawing and experiment with different sizes. When you've selected a size, click **OK** to accept it. After the Drawing Size dialog box closes, choose **Show Rulers** from the **Layout** menu. Then scroll as far down and as far right as you can to see how big the drawing is. Notice how the size of the scroll box gets smaller compared with the scroll bar as the size of the drawing gets larger.

Creating a Custom Ruler

You can create customized rulers to display along the top and left edges of the drawing window.

Customized rulers are especially useful if you're drawing to scale. For example, if you're working in a scale where one inch in the drawing equals four feet in the real world, you can change the numbers on the rulers from 1, 2, 3, and so on to 4, 8, 12, and so on. That way you don't have to calculate any conversions in the measurements as you create the drawing.

To create a set of customized rulers, you choose **Custom Rulers** from the **Layout** menu. This dialog box appears:



The dialog box is titled "Custom Rulers:". It contains several settings with radio buttons. "Ruler:" has "Standard" selected and "Custom" unselected. "Zero:" has "Locked" selected and "Unlocked" unselected. "Unit:" has "Dot", "Inch", and "Cm" unselected. "Divisions:" has "1", "1/2" (selected), and "1/4" unselected. "Increment:" has a grid of radio buttons with "1" selected, and "2", "3", "4", "5", "8", "10", "15", "20", and "25" unselected. At the bottom are "OK" and "Cancel" buttons.

Custom Rulers:				
Ruler:	<input checked="" type="radio"/> Standard	<input type="radio"/> Custom		
Zero:	<input checked="" type="radio"/> Locked	<input type="radio"/> Unlocked		
Unit:	<input type="radio"/> Dot	<input type="radio"/> Inch	<input type="radio"/> Cm	
Divisions:	<input type="radio"/> 1	<input checked="" type="radio"/> 1/2	<input type="radio"/> 1/4	
Increment:				
<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
<input type="radio"/> 8	<input type="radio"/> 10	<input type="radio"/> 15	<input type="radio"/> 20	<input type="radio"/> 25
<input type="button" value="OK"/>		<input type="button" value="Cancel"/>		

You select the **Custom** setting, and select whatever other settings you want for the customized rulers.

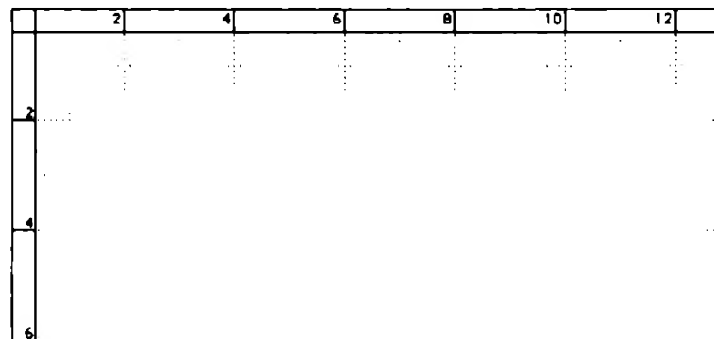
The **Zero** setting lets you choose whether you want the zero point on the rulers to be fixed in one place or moveable (the zero point doesn't have to be in the upper left corner).

Advanced Techniques

The **Unit** setting lets you divide the rulers by dots (pixels), inches, or centimeters.

The **Divisions** setting lets you choose where you want tick marks to appear on the rulers. You click the check box next to 1 if you want tick marks to appear on the rulers only at whole increment values; you click the check box next to 1/2 if you want tick marks to appear on the rulers at both whole and half increment values, and you click the check box next to 1/4 if you want tick marks to appear on the rulers at whole, half, and quarter increment values.

The **Increment** setting lets you select the number of units you want in each whole division on the rulers (the whole divisions are marked with tick marks the full width of the ruler). For example, if you've selected 2 as the increment value, the first tick mark appears two units from the end of the ruler, the next one four units from the end of the ruler, the third one six units from the end, and so on, like this:



When you've selected the settings you want, you click **OK** to record the settings and to return to the drawing window.

If the rulers are visible in the drawing window, they change to the new settings. If the ruler lines are visible, they also change to match the new settings.

Advanced Techniques

Try this:

Close the new drawing window you opened earlier. **ScienceFair** reappears on the drawing board. Notice that all the rectangles representing booths are aligned with the ruler lines.

Choose **Custom Rulers** from the **Layout** menu. Select **Custom**, **Cm** as the units, and **10** as the increment. Then click **OK**.

When the rulers and ruler lines are redrawn, notice that the objects in the drawing window haven't moved. Changing the rulers doesn't affect the objects in the window in any way.

Look at the rulers themselves. Notice the increment you've chosen is just a label. Each tick mark on the ruler marks just one centimeter, even though the tick marks are labeled 10, 20, and so on.

Experiment with different settings to see the effects you can create. You can change the rulers as many times as you want without affecting the content of a drawing.



Shortcuts

The shortcuts introduced in this section are intended for you to use once you've become familiar with *Draw Plus* and feel comfortable with it. They're explained as briefly as possible without illustrations or examples.

The shortcuts fall into two groups: *alternatives* and *guides*.

Alternatives give you a second, quicker way to do something you already know how to do. For example, you can close a drawing window by pointing to the close box and clicking the mouse button.

Guides are *Draw Plus*' version of drawing tools like the T-square, compass, protractor, and straight edge. They help you to draw figures like perfect circles that are almost impossible to do freehand. For example, if you want to draw a straight line at a 45-degree angle, you can hold down the *shift* key to limit the straight line tool to one of three positions: horizontal, vertical, and 45-degree diagonal.

The shortcuts are given first for the tools, then for the palettes, and finally for the menus.

Tools

To draw several objects in a row with the same tool without having to select the tool each time, double-click the tool.



Straight Line

- To draw a horizontal, vertical, or 45-degree line, hold down the *shift* key.



Rectangles (Hollow or Filled)

- To draw a square rather than a rectangle, hold down the *shift* key.



Rounded Rectangles (Hollow or Filled)

- To draw a rounded square rather than a rounded rectangle, hold down the *shift* key.



Ovals (Hollow or Filled)

- To draw a circle rather than an oval, hold down the *shift* key.



Polygons (Hollow or Filled)

- To draw a figure with the polyline tool that has lines that are horizontal, vertical, or 45-degree diagonal only, hold down the *shift* key.

Border Palette

- To change the border to a color or pattern, hold down the *command* key while you select the color or pattern you want.

Menus

File

Dialog Boxes

- Press the *return* key or the *enter* key to carry out the function you've selected.
- Press the *esc* key to cancel the function you've selected.

New

- Hold down the *command* key and type *N*.

Open

- Hold down the *command* key and type *O*.

Close

- Click the close box, which is at the left end of the drawing window's title bar.

Save

- Hold down the *command* key and type *S*.

Shortcuts

Print

- Hold down the *command* key and type *P*.

Quit

- Hold down the *command* key and type *Q*

Edit

Undo

- Hold down the *command* key and type *Z*

Cut

Select the object you want to cut, then:

- Hold down the *command* key and type *X*.

Copy

Select the object, then:

- Hold down the *command* key and type *C*

Paste

- Hold down the *command* key and type *V*

Duplicate

- Hold down the *command* key and type *D*

Text

Choose Font

Select the text tool, then:

- Hold down the *command* key and type *T*.

Arrange

Move to Front

- Hold down the *command* key and type *F*.

Move to Back

- Hold down the *command* key and type *B*.

Group

- Hold down the *command* key and type *G*.


Ungroup

- Hold down the *command* key and type *U*.

Color

Edit Color

- To transfer any color in the Edit Color window (any color in the mixers, any color in the color bars, or any color in the spectrum palette in the lower right corner of the screen) to the palette, point to the color, hold down the mouse button, and drag it there.



Reference

This section covers in a concise and detailed form every aspect of *Draw Plus*. It's the place to find anything that isn't covered in the guided tour. The "Reference" is organized by the way things appear on the screen: the tool, border, and color/pattern palettes are illustrated and explained, and the menu functions are listed according to the menu they appear on.

Reference Contents

The Drawing Board	100
The Drawing Window	101
The Tool Palette	101
The Border Palette	103
The Arrow Palette	104
The Color/Pattern Palette	106
Scroll Bars	107
The Boxes	107
The Close Box	107
The Full Size Box	108
The Change Size Box	108
The Zoom Boxes	108
Apple	109
About	109
Change Resolution	110
Clock	111
File	112
New	113
Open	114

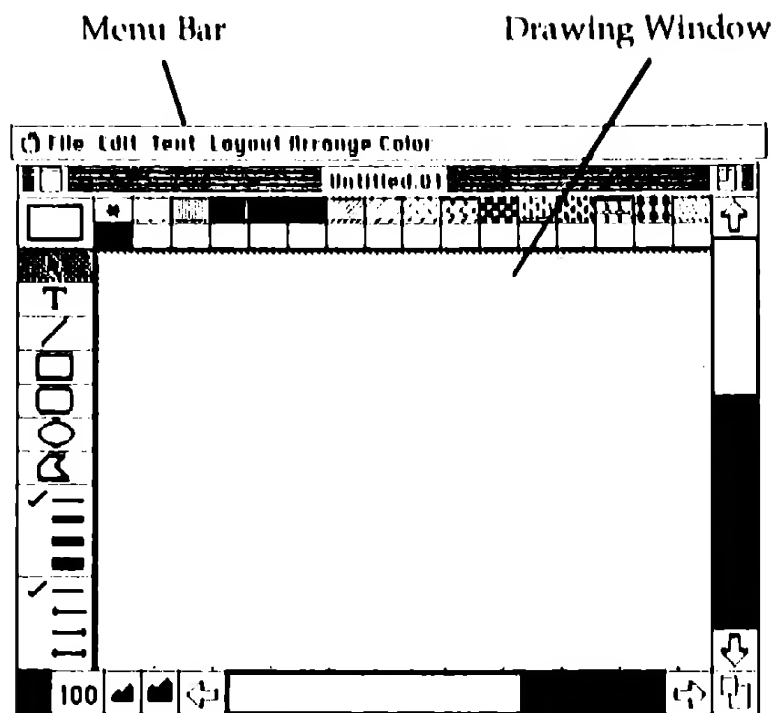
Reference

Close	115
Save	115
Save As	117
Revert	118
Create Paint Files	119
Choose Printer	119
Page SetUp	123
Print	129
Quit	133
Edit	134
Undo	134
Cut	135
Copy	135
Paste	136
Clear	137
Duplicate	137
Select All	137
Reshape	138
Round Corners	139
Arc Radius Lines	140
Text	142
Choose Font	142
Lower Case	144
Upper Case	145
Title	145
Layout	146
Show/Hide Rulers	146
Custom Rulers	147
Turn Grid On/Off	152
Hide/Show Ruler Lines	155
Show/Hide Size	156
Hide/Show Page Breaks	157

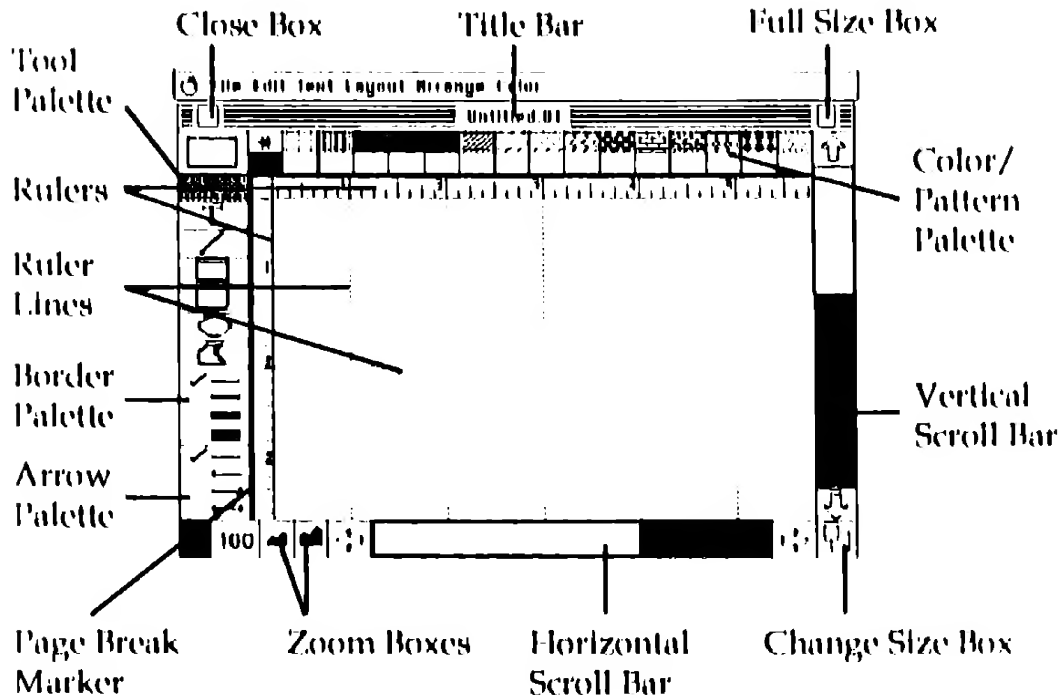
Drawing Size	158
Default Settings	163
Arrange	165
Move to Front	165
Move to Back	166
Rotate Left	167
Rotate Right	168
Flip Horizontal	169
Flip Vertical	169
Group	170
Ungroup	171
Lock	171
Unlock	172
Align to Grid	172
Align Objects	173
Color	178
Edit Color	178
Color Table	184
Edit Pattern	186
Icon Chooser	188
Icon Editor	193

Reference

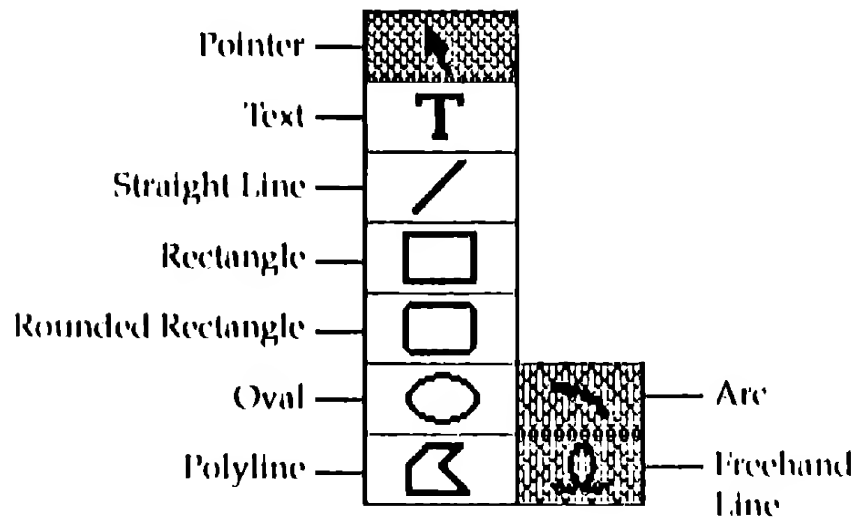
The Drawing Board



The Drawing Window



The Tool Palette



Reference

Pointer. Select and position objects.

Text. Activate the keyboard so you can add text to the drawing in the drawing window.

Straight Line. Draw a straight line; its color (or pattern) and width match the line selected on the border palette.

Rectangle. Draw either an outline of a rectangle or square, or a rectangle or square that's filled with a color or pattern.

Rounded Rectangle. Draw either an outline of a rectangle or square with rounded corners, or a rounded rectangle or square that's filled with a color or pattern.

Oval. Draw either an outline of an oval or circle, or an oval or a circle that's filled with a color or pattern.

Arc. Draw an arc that's one quarter of the circumference of a circle or oval, or draw a quarter slice of a circle or oval that's filled with a color or pattern. The arc tool isn't displayed on the tool palette. To select the arc tool, point to the oval and press *option-shift*. The oval icon changes to the arc icon on the tool palette.

Polyline. Draw an open figure made up of any number of straight lines; or draw either the outline of a polygon or a polygon that's filled with a color or pattern. (A figure you draw with the polyline tool doesn't fill with a color or pattern automatically as a rectangle or oval does; you have to select the figure, point to the color you want, then click the mouse button.)

Freehand Line. Draw lines freehand. The freehand line tool isn't displayed on the tool palette. To select the freehand tool, point to the polyline and press *option-shift*. The polyline icon changes to the freehand icon on the tool palette.

A line or the outline of a shape always matches the color (or pattern) and width of the line selected on the border palette.

A filled shape is always filled with the selected color (or pattern) and has an outline matching the color (or pattern) and the width of the line selected on the border palette.

The Border Palette

The border palette has four different line widths you can choose from.



The thinnest line is the same width as the ruler lines (the grid of lines that cover the drawing area in the drawing window). The other lines are two, three, and four times as wide. The line width with the check beside it is the one that's selected.

The border palette controls the width of the straight line tool and the width of the outline of all the shapes (the hollow and filled rectangles, the hollow and filled ovals, and the hollow and filled polylines).

Reference

To select a line width:

- Point to the line you want and click the mouse button.

To change the border lines to a color or pattern:

- Hold down the *command* key, point to the color or pattern you want to change the border lines to, and click the mouse button.

You can choose a border or line width either before or after you draw an object or line.

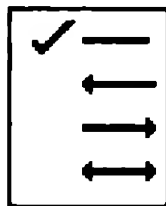
To change the width after you've drawn an object or line:

- Select the object or line.
- Point to the width you want and click the mouse button.

If you select a width when no object or line is selected, *Draw Plus* uses that width for all the objects and lines you draw until you change the width again.

The Arrow Palette

You use the arrow palette to put arrowheads on lines you draw with the straight line tool.



The arrow palette has three different kinds of arrows you can choose from. One has an arrowhead pointing left, and one an arrowhead pointing right. The third has arrowheads at both ends. You use the line without any arrowheads to draw simple straight lines.

To draw an arrow:

- Point to the type of arrow you want and click the mouse button.
- Select the straight line tool and draw a line.

The type of arrowhead you've chosen is automatically added to the line when you've finished drawing it.

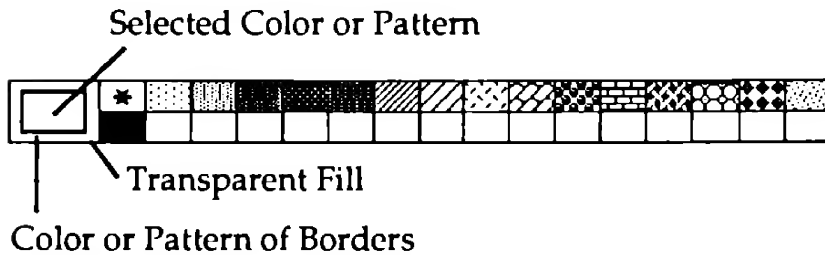
To add an arrowhead to a line after you've drawn it:

- Select the line.
- Point to the type of arrow you want and click the mouse button.

If you select one of the arrowheads when no line is selected, *Draw Plus* uses that type of arrowhead for all the lines you draw until you choose either a different type of arrowhead or no arrowhead at all.

The Color/Pattern Palette

The color/pattern palette contains the colors and patterns you have to choose from in creating an object.



You can change the background against which the text is displayed by selecting the text, pointing to a color or pattern, and then clicking the mouse button. The color or pattern may affect the appearance of the text itself, so you may have to experiment to get exactly the effect you want. If you're using high resolution, you may not get the color that's on the palette, since those colors are actually mixtures.

Scroll Bars

Use the horizontal scroll bar to move a drawing left or right in the drawing window.


Use the vertical scroll bar to move a drawing up or down in the drawing window.



To use the scroll bars:

- Point to the scroll box, hold down the mouse button, and move the box in the direction you want the drawing to move; or point to an arrow and click the mouse button.

The Boxes

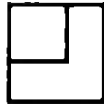
 **The Close Box.** Use the close box to remove a drawing from the screen.

To use the close box:

- If you want to keep the drawing you're about to close, save it first.
- Point to the close box and click the mouse button.

The drawing disappears from the screen. (If a dialog box appears that asks **Save changes before closing?**, see the instructions at the beginning of the "File" section.)

Reference



The Full Size Box. Use the full size box to expand the drawing window to fill the entire drawing board (or to return an expanded drawing window to its original size).

To expand or shrink a drawing window:

- Point to the full size box and click the mouse button.



The Change Size Box. Use the change size box to change the size of a drawing window.

To change the size of a window:

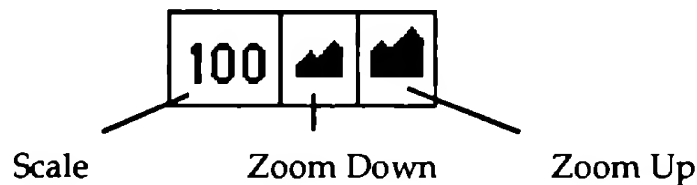
- Point to the change size box, press the mouse button, and hold it down.

An outline appears around the drawing window.

- Drag the outline of the window until it's the size you want.
- Release the mouse button.

The drawing window is redrawn in the size the outline indicates.

The Zoom Boxes. Use the zoom boxes to change the scale of the drawing in the window.



A drawing's current scale is shown to the right of the zoom boxes as a percentage.

To reduce the scale of a drawing by half:

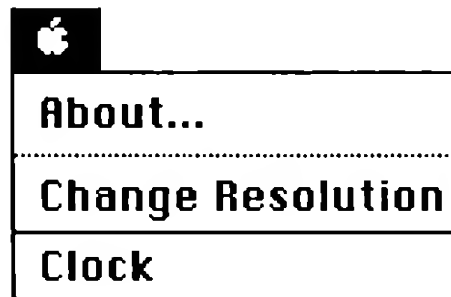
- Click the zoom down box.

The scale of the drawing is reduced by half (so twice as much of the drawing appears on the screen).

To double the scale of a drawing:

- Click the zoom up box.
- The scale of the drawing is doubled (so only half as much of it appears on the screen), until you reach the maximum drawing size, 96 by 80 inches.

Apple



About

About gives you information about the version of *Draw Plus* you're using. It also tells you how many objects there are in the active window and in all the windows that are open.

Reference

To use **About**:

- Choose **About** from the **Apple** menu.

A message box with information about *Draw Plus* appears.

- To go back to the drawing board, click **OK**.

Change Resolution

Use **Change Resolution** to change from high resolution to low resolution or back again.

Changing resolution doesn't change the size of the drawing, it just changes the number of pixels in a drawing. A pixel is the smallest dot that *Draw Plus* can display on the screen. In high resolution there are twice as many dots as there are in low resolution, so objects are clearer and smoother.

The resolution you choose affects the number of colors and the size of text that *Draw Plus* can display:

If you choose low resolution, *Draw Plus* can display 16 true colors (plus black and white). Text and objects appear less smooth than in high resolution.

If you choose high resolution, *Draw Plus* can display only 4 colors (plus black and white). When you're working in high resolution, *Draw Plus* displays what appear to be 16 colors in the palette in the drawing window. They're not 16 true colors – they're actually just a mixture of 4 basic colors. The 4 basic colors are shown on the Edit Color window. (See "Edit Color" under "Color" towards the end of this section for information about the color palette.)

To change resolution:

- Choose **Change Resolution** from the **Apple** menu.

If you're currently using high resolution, the screen changes to low resolution; if you're using low resolution, it changes to high resolution.

Objects may also change color when you switch from one resolution to another. An object changes to the color that's in the same position on the palette that its original color occupied.

Clock

Use **Clock** to display the current date and time.

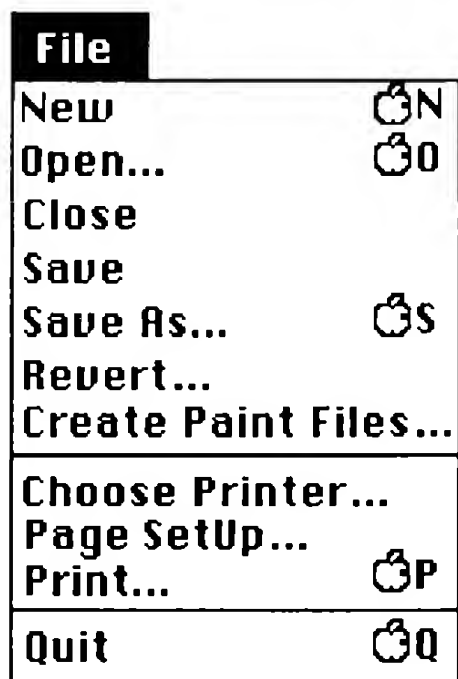
To use **Clock**:

- Choose **Clock** from the **Apple** menu.

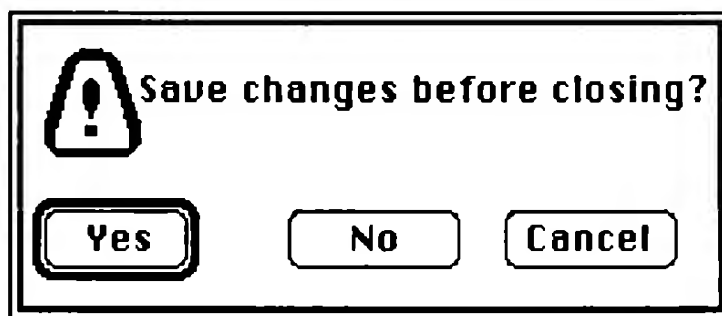
The **Clock** window appears. It contains the current date and time. You can move the **Clock** anywhere on the screen, just like any other window.

- To remove the **Clock** window from the screen, click its close box.

File



Occasionally, when you choose a selection from the File menu, this dialog box may appear:



It means you've made changes to the drawing on the screen since you last saved it. The dialog box gives you a chance to save those changes.

The three buttons in the box give you these choices:

Yes. Click **Yes**, and a dialog box appears that lets you save the drawing. Name the drawing if you need to, then click **Save**. Once you've saved the drawing, the command you've selected is carried out.

No. Click **No**, and the command you've selected is carried out immediately. The drawing on the screen isn't saved and you can't get it back.

Cancel. Click **Cancel** if you decide you don't want the command you've selected to be carried out.

New

Use **New** to start a new drawing. The color (or pattern), the border, and the tool that are selected are left unchanged. The Clipboard is also left as it is. You can have up to eight drawing windows open at a time.

You can't undo **New** once it has been carried out.

To use **New**:

- Choose **New** from the **File** menu, or hold down the *command* key and type *N*.

A clean page appears so you can start a new drawing.

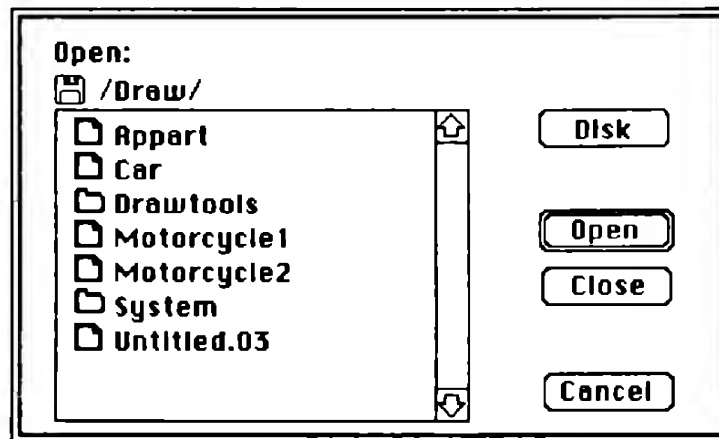
Open

Use **Open** to redisplay a drawing you've saved on a disk. You can't undo **Open** once it has been carried out.

To use **Open**:

- Choose **Open** from the File menu, or hold down the *command* key and type *O*.

A dialog box appears.



- Click the name of the drawing you want to open.

The buttons on the box give you these choices:

Open. Click **Open** to have the drawing you've selected displayed in the drawing window.

Close. Click **Close** if there's a folder open and you want to close it. If there's no folder open, **Close** is dimmed.

Disk. If the drawing you want to open is on a disk other than the one in the drive, put the new disk in the drive and then use **Disk** to display the names of the pictures on the new disk.

Cancel. Click **Cancel** if you decide not to open a drawing.

Close

Use **Close** to remove a drawing from the screen. It doesn't save the drawing, and it doesn't give you a clean page. You can't undo **Close** once it has been carried out.

To use **Close**:

- If you want to keep the drawing you're about to close, save it first.
- Choose **Close** from the **File** menu, or click the close box (at the left end of the title bar).

The drawing disappears from the screen. (If a dialog box appears that asks **Save changes before closing?**, see the instructions at the beginning of the "File" section.)

Save

Use **Save** to make a permanent copy of a drawing on a disk. The patterns and colors in the palette are saved with the drawing. If there's already a drawing (or any other file) on the disk that has the same name as the drawing, the drawing erases it and replaces it.

You can't undo **Save** once it has been carried out.

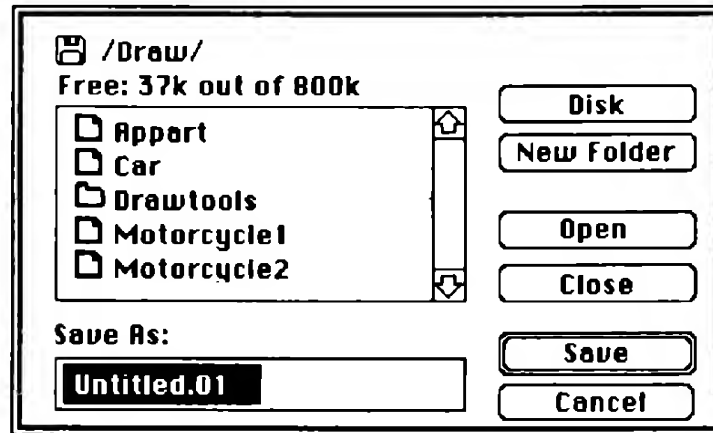
Reference

To use **Save**:

- Choose **Save** from the **File** menu, or hold down the *command* key and type *S*.

If you've saved the drawing before, *Draw Plus* saves it again immediately.

If you're saving a drawing for the first time, a dialog box appears.



- Type a name for the drawing in the space under **Save As**.

The buttons on the box give you these choices:

Disk. If you want to save the drawing on a disk other than the one in the drive, replace the disk in the drive with the new disk. Use **Disk** to display the names of the documents on the new disk.

New Folder. To create a new folder, type a name for it in the space under **Save As**, then click **New Folder**. Use **Open** to open the new folder whenever you want to save a drawing in it.

Open. If you want to save a drawing in a folder, select the folder from the catalog and click **Open**.

Close. You can use **Close** only if a folder is open. Use **Close** to close the folder.

Save. Click **Save** when you're ready to save the drawing.

If a dialog box appears that says **Volume full**, there isn't enough room on the disk to save the picture. Click **OK**, then eject the disk from the drive and replace it with a disk that has space on it.

Cancel. Click **Cancel** if you decide not to save the drawing.

Save As

Use **Save As** to save different versions of the same drawing. You first give a new name to a drawing you've already saved and then save the drawing under the new name.

As long as you give the new version a different name, **Save As**, unlike the **Save** command, doesn't replace the old drawing with the new one.

You can also use **Save As** to create a folder to save drawings in. Saving drawings in a folder is an easy way to keep drawings that are related together.

You can't undo **Save As** once it has been carried out.

To use **Save As**:

- Choose **Save As** from the **File** menu.

Reference

A dialog box appears that's just like the one that accompanies the **Save** command. The functions of the buttons and the formats that are available are explained above.

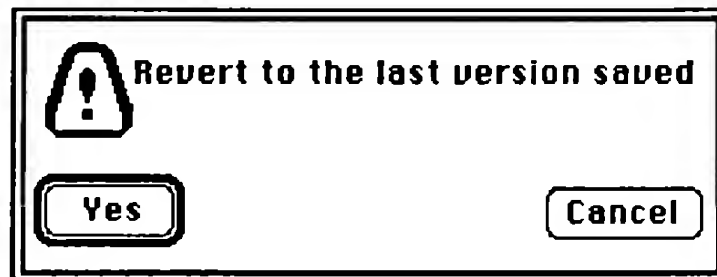
Revert

Use **Revert** to replace the drawing on the screen with the last version you saved. **Revert** has the effect of letting you undo all the changes you've made to a drawing since the last time you saved it. You can't undo **Revert** once it has been carried out.

To use **Revert**:

- Choose **Revert** from the **File** menu.

A dialog box appears. It asks you if you want to revert to the last version saved.



The buttons in the box give you these choices:

Yes. Click **Yes** to replace the drawing on the screen with the version that's on the disk. The drawing window goes blank, and after a moment, the last version saved appears.

Cancel. Click **Cancel** if you decide you don't want to revert to the previous version.

Create Paint Files

Use **Create Paint Files** to save your work as a painting instead of a drawing. You can then make changes to the picture using *Paintworks Plus*. If you save a drawing as a painting, it will look the same, but you won't be able to move, change the shape or size of any of the objects, or do any of the other things you can normally do with objects. The objects are now parts of a picture and act as if you'd painted them on a piece of paper.

To save a drawing as a painting:

- Choose **Create Paint Files** from the **File** menu.

A dialog box appears that's just like the one that accompanies the **Save** command. The functions of the buttons and the formats that are available are explained earlier in this section, under "Save."

Choose Printer

Use **Choose Printer** to let *Draw Plus* know what type of printer you have connected to your computer and which port the printer is connected to.

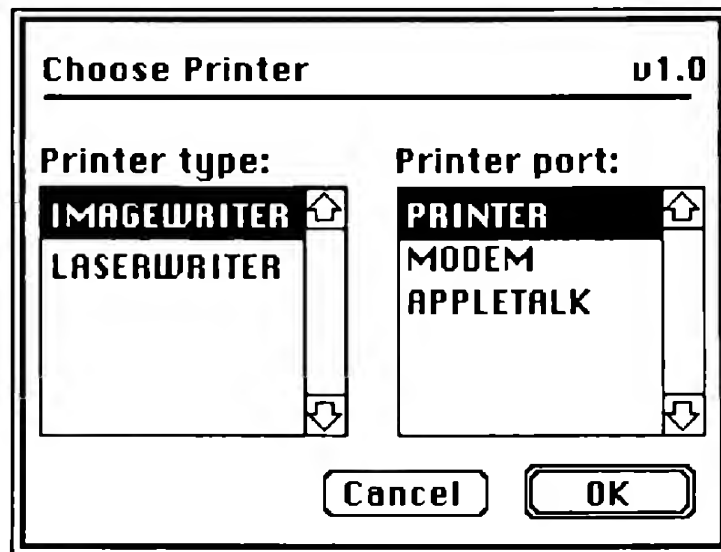
Reference

If you're using AppleTalk, see "Using AppleTalk" later in this section, then follow the instructions below.

To use **Choose Printer**:

- Make sure that the *Draw Plus* system disk is in the disk drive that's active.
- Select **Choose Printer** from the File menu.

A dialog box appears.



- Select one of the printers from the printer type catalog. Use the arrows to scroll the list up or down if you need to.
- Select one of the ports from the printer port catalog.

The buttons in the box give you these choices:

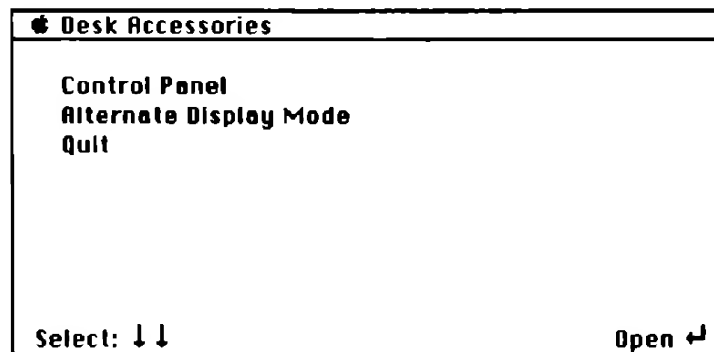
OK. Click **OK** when you've selected your printer and the port it's connected to.

Cancel. Click **Cancel** to return any settings you've changed to the way they were originally and to return to the drawing window.

Using AppleTalk. If you want to choose AppleTalk as the printer port:

- Go to the Control Panel. To do so, first hold down *control* and the *command* key, then press *esc*.

The drawing window disappears and the **Desk Accessories** menu appears:



- Select **Control Panel**, then press *return*.

The **Control Panel** menu appears.

- Use the arrow keys to highlight **Slots**, then press *return*.

A listing appears with the settings of your computer's slots.

Reference

- Use the up and down arrow keys to highlight **Slot 1**, then use the right arrow key to display **Your Card** next to it.

Note: Make sure **Slot 1** is not set to **Printer Port**, or your computer will stop working when you try to use AppleTalk.

- Use the arrow keys to highlight **Slot 7** and set it to **Built-in AppleTalk**.
- Press *return* to save the slot settings and to return to the **Control Panel** menu.
- Select **Quit** to return to the **Desk Accessories** menu.
- Select **Quit** on the **Desk Accessories** menu to go back to *Draw Plus*.
- If you've made changes to the documents in any of the drawing windows that are open, save them.
- Close all the drawing windows, quit *Draw Plus*, and turn the computer off.

The changes you made to the settings of the slots on the Control Panel won't take effect until you start the computer again.

- Turn on the computer again and restart *Draw Plus*.
- Follow the instructions for using **Choose Printer** above, and choose **Appletalk** from the printer port catalog.

When you're finished using AppleTalk, go to the Control Panel and change the settings of the slots back to the way they were. Then turn the computer off, turn it back on again, and restart *Draw Plus*.

Page SetUp

Use **Page SetUp** to indicate how your printer is to print a drawing on the page.

Page SetUp is different from a drawing's format. A drawing's format is made up of margin settings, alignment, and so on. **Page SetUp** determines how a format that's already set appears on a page: you can, for example, print a drawing on its side (with the top of the drawing parallel to the long edge of the paper rather than the short edge), or you can print a drawing at half its usual size.

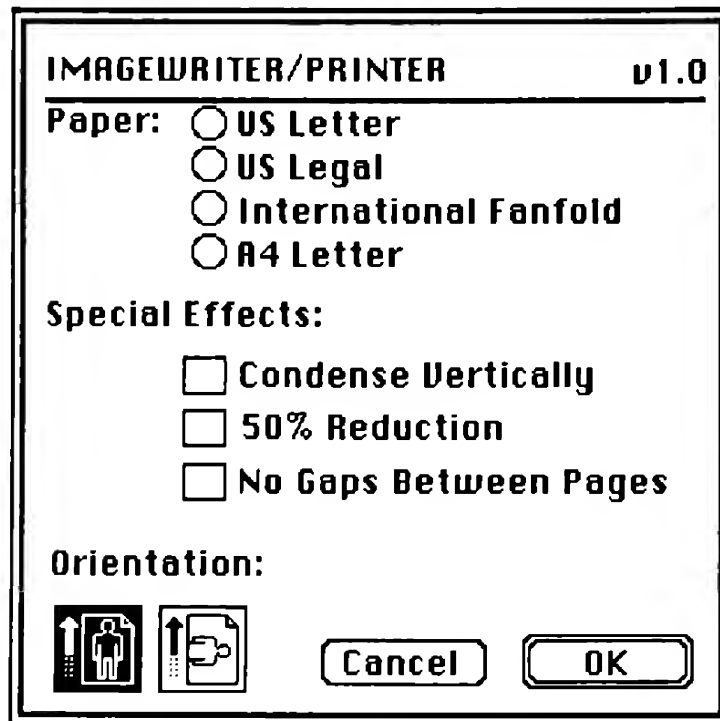
The settings you choose are saved when you save the drawing.

To use **Page SetUp**:

- Choose **Page SetUp** from the **File** menu.

A dialog box appears. The settings you can choose from differ depending on the type of printer you selected in the Choose Printer dialog box.

ImageWriter. If you chose **ImageWriter** in the Choose Printer dialog box, the Page SetUp dialog box looks like this:



These are the settings you can choose from:

Paper:

US Letter. For paper 8 1/2 inches wide and 11 inches tall.
(This option is automatically selected.)

US Legal. For paper 8 1/2 inches wide and 14 inches tall.

International Fanfold. For international standard paper,
8 1/4 inches wide and 12 inches tall.

A4 Letter. For European standard paper, 8 1/4 inches wide
and 11 2/3 inches tall.

Special Effects:

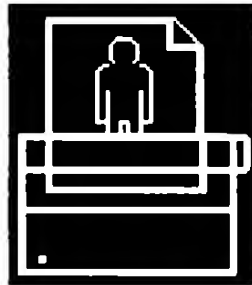
Condense Vertically. The drawing is printed half the height of the drawing on the screen, but with the same number of dots as a normal drawing.

50% Reduction. The drawing is printed half its normal size.

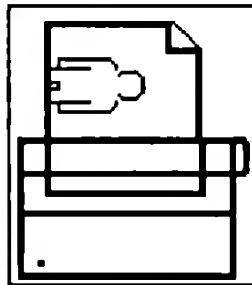
No Gaps Between Pages. The drawing is printed continuously, without page breaks.

Orientation:

Tall



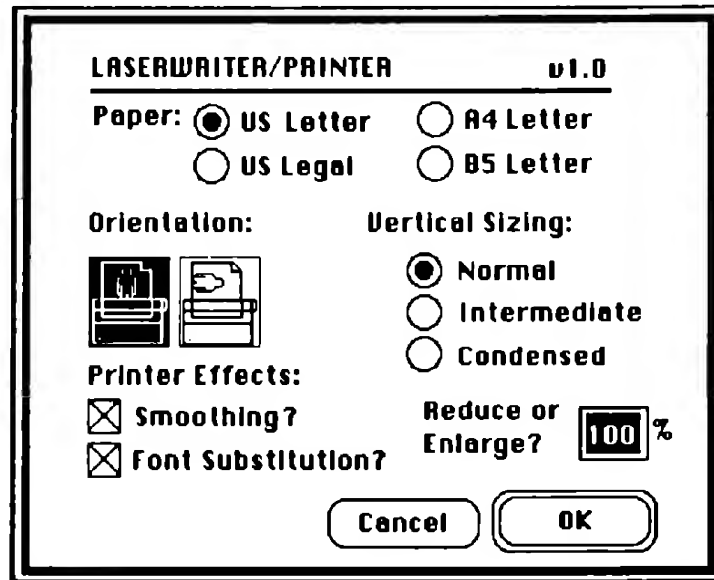
Wide



Tall. The drawing is printed upright on the page, with the top of the drawing at the top of the page. (This option is automatically selected.)

Wide. The drawing is printed sideways on the page, with the top of the drawing down the right side of the page.

LaserWriter. If you chose LaserWriter in the Choose Printer dialog box, the Page SetUp dialog box looks like this:



These are the settings you can choose from:

Paper:

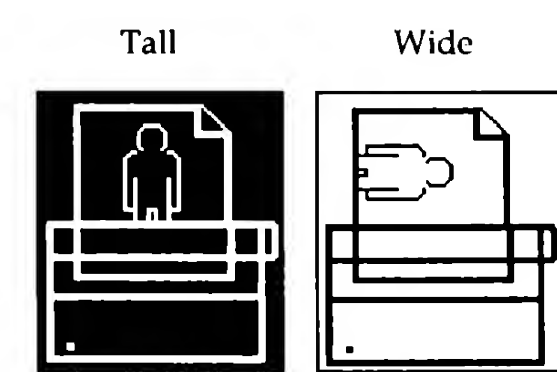
US Letter. For paper 8 1/2 inches wide and 11 inches tall.
(This option is automatically selected.)

US Legal. For paper 8 1/2 inches wide and 14 inches tall.

A4 Letter. For European standard paper, 8 1/4 inches wide and 11 2/3 inches tall.

B5 Letter. For paper 15 inches wide and 11 inches tall.

Orientation:



Tall. The drawing is printed upright on the page, with the top of the drawing at the top of the page. (This option is automatically selected.)

Wide. The drawing is printed sideways on the page, with the top of the drawing down the right side of the page.

Vertical Sizing:

Normal. The printed drawing looks just like it does on the screen (the page is printed with the same number of rows of dots as the drawing on the screen is displayed in).

Intermediate. The drawing printed looks two-thirds as high as the drawing on the screen (the page is printed with one and a half times the number of rows of dots as the drawing on the screen is displayed in). Select this option to fit a full page drawing on paper that's being printed in the **Wide** rather than the **Tall** orientation.

Condensed. The drawing is the same height as it appears on the screen, but it's printed with twice as many rows of dots as the drawing on the screen is displayed in. The result is a high-resolution printed copy that resembles what a Macintosh would produce.

Reference

Printer Effects:

Smoothing. The printer adds extra dots in between points that form a line to produce a higher-resolution copy.

Font Substitution. When you use certain fonts in a drawing, a LaserWriter substitutes different fonts for the ones you've used when it prints the drawing out. Some of the substitutions it makes automatically, others only if you tell it to. This option tells the LaserWriter to make the substitutions it does not do automatically.

A LaserWriter substitutes its own fonts for the ones you've used because its fonts have a higher resolution, so they're clearer and smoother. When it doesn't make a substitution, it just copies the fonts as they appear on the screen. Text that's copied from the screen looks blocky.

The table below summarizes how **Font Substitution** affects the fonts you've chosen. If you've chosen the font in the left column, the middle column shows the font that's printed without **Font Substitution**, and the right column shows the font that's printed with **Font Substitution**.

<i>Font Chosen</i>	<i>Without Substitution</i>	<i>With Substitution</i>
Shaston	Helvetica	Helvetica
Helvetica	Helvetica	Helvetica
Courier	Courier	Courier
Times	Times	Times
Monaco	Monaco	Courier
Geneva	Geneva	Helvetica
New York	New York	Times

Reduce or Enlarge. To reduce or enlarge the text in a drawing, type the percentage you want the text reduced or enlarged by in the space next to **Reduce or Enlarge?**.

You can type a number from 25% to 400% (50% reduces the text to half its normal size; 200% enlarges the text to twice its normal size).

The buttons in the box give you these choices:

OK. Click **OK** to record the settings you've chosen.

Cancel. Click **Cancel** to return any settings you've changed to the way they were originally and to return to the drawing window.

Print

Use **Print** to print a copy of the drawing in the drawing window that's currently active using the settings in the Page SetUp dialog box.

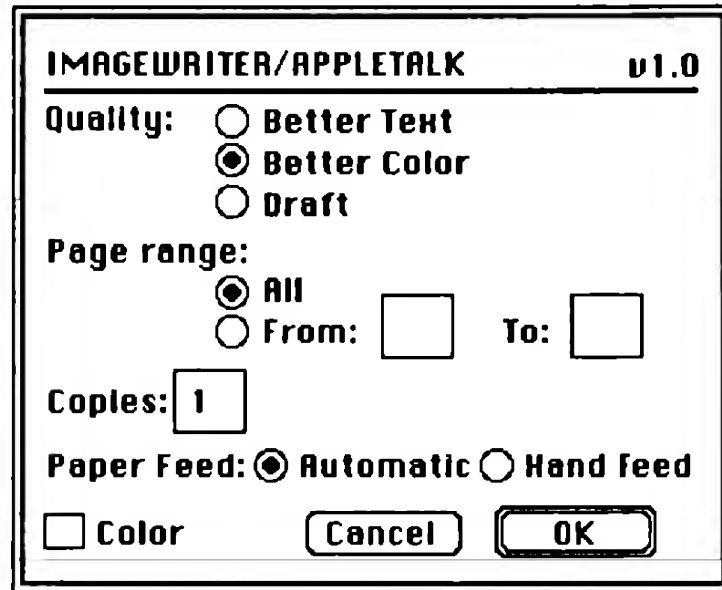
To stop printing once it has started, hold down the *command* key and type a period.

To use **Print**:

- Choose **Print** from the **File** menu, or hold down the *command* key and type *P*.

A dialog box appears. The settings you can choose from differ depending on the type of printer you selected in the Choose Printer dialog box.

ImageWriter. If you chose **ImageWriter** in the Choose Printer dialog box, the Print dialog box looks like this:



These are the settings you can choose from:

Quality:

Better Text. Produces the highest quality printed copy, but takes the longest to print. **Better Text** produces high quality printed text by using a font that's twice the size of the actual font you've used, then condensing that font to half its size. For **Better Text** to work, every font you've used has to exist in a point size that's twice as big as the size in the drawing. For example, if you've used a 12-point font, check the **Style** menu to see if the font exists in 24 points (24 point appears on the menu in bold if it does). If the double-size fonts you need don't exist, then print the drawing using **Better Color**. Otherwise, any font in the drawing that doesn't exist in a size twice as big appears half its size when it's printed.

Better Color. Produces a high quality printed copy and takes less time than **Better Text** to print. **Better Color** prints all the fonts, styles, and sizes in the drawing as they appear on the screen. (This option is automatically selected.)

Draft. *Draw Plus* can't print a draft-quality drawing (**Draft** is intended for documents that are mostly text; it doesn't print pictures or any special fonts, font styles, or font sizes you've used). If you select **Draft**, *Draw Plus* uses **Better Color**.

Page Range:

All. All the pages of the drawing are printed. (This option is automatically selected.)

From: ____ To: ____. Lets you pick a range of pages you want *Draw Plus* to print. Click the check box, then type the numbers of the first and last pages you want to have printed. The pages are numbered from top to bottom, then left to right.

Copies. If you want more than one copy, type the number of copies you want.

Paper Feed:

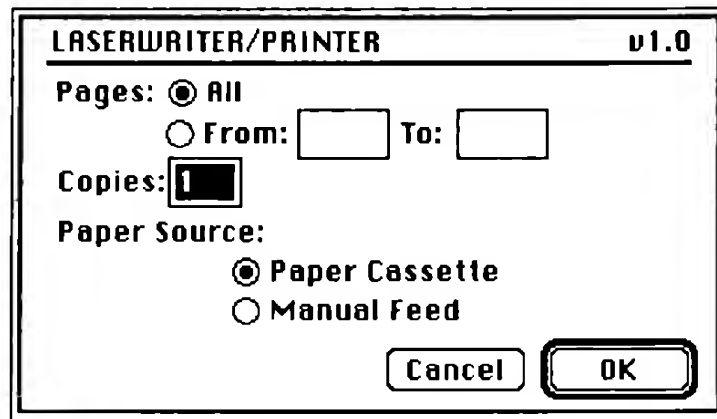
Automatic. For continuous computer paper. (This option is automatically selected.)

Hand Feed. For single sheets of paper that you feed into the printer by hand, one at a time.

Color. Don't choose this option if you have an ImageWriter I (the ImageWriter I can't print colors). If you have an ImageWriter II, choose this option if you have a color ribbon in your printer.

Reference

LaserWriter. If you chose **LaserWriter** in the Choose Printer dialog box, the Print dialog box looks like this:



These are the settings you can choose from:

Pages:

All. All the pages of the drawing are printed. (This option is automatically selected.)

From: ___ To: ___. Lets you pick a range of pages you want *Draw Plus* to print. Click the check box, then type the numbers of the first and last pages you want to have printed. The pages are numbered from top to bottom, then left to right.

Copies. If you want more than one copy, type the number of copies you want.

Paper Source:

Paper Cassette. For paper that's in a cassette. (This option is automatically selected.)

Manual Feed. For single sheets of paper that you feed into the printer by hand, one at a time.

The buttons in the box give you these choices:

OK. When you've selected the settings you want, click **OK** to start printing.

Cancel. Click **Cancel** to return to the drawing window without printing the drawing. Any settings you've changed are returned to the way they were originally.

Quit







Use **Quit** to leave *Draw Plus*. You can't undo **Quit** once it has been carried out.

To use **Quit**:

- If you want to keep the drawing on the screen, save it.
- Choose **Quit** from the **File** menu, or hold down the *command* key and type *Q*.

The entire screen is erased, and you can start another application. (If a dialog box appears that asks **Save changes before closing?**, see the instructions at the beginning of the "File" section.)

Edit

Edit	
Undo	 Z
Cut	 H
Copy	 C
Paste	 V
Clear	
Duplicate	 D
Select All	 A
Reshape	
Round Corners...	
Arc Radius Lines	

Undo

Use **Undo** to cancel the last change you made to a drawing.

Note: You can't use **Undo** to cancel any of the commands on the **File** menu.

To use **Undo**:

- Pull down the **Edit** menu and click **Undo**; you can also hold down the *command* key and type **Z**.

The last change you made to the drawing is canceled.

Cut

Use **Cut** together with **Paste** to move a drawing (or a part of one) from one place on a page to another place, from one drawing file to another, or from a drawing file to a drawing created with some other application.

To use **Cut**:

- Select the image you want to cut.
- Choose **Cut** from the **Edit** menu, or hold down the *command* key and type **X**.

The drawing you've selected disappears from the screen and is placed on the Clipboard. You can now go to the drawing's new location and use the **Paste** command to place the drawing there.

Note: The largest area you can cut at one time is the area of the drawing window. If you want to move a drawing larger than that, you have to move it in pieces.

Copy

Use **Copy** to make as many copies of an image as you want.

To use **Copy**:

- Select the image you want to copy.
- Choose **Copy** from the **Edit** menu; you can also hold down the *command* key and type **C**, or hold down the *command* key and click the selected area.

Reference

A copy of the drawing you've selected is placed on the Clipboard.

- To insert a copy of the drawing, use the **Paste** command.

Paste

Use **Cut** together with **Paste** to move an image from one place on a page to another place, from one drawing file to another, or from a drawing file to a drawing created with some other application. If you want to move a *copy* of an image instead of the original image itself, use **Copy** instead of **Cut**.

If you paste an image you've cut or copied from one drawing to another, the colors in the pasted image change to the colors in the palette of the new image if they're different from the colors in the palette of the original drawing.

- First select the image you want to move and then use **Cut** or **Copy**.
- Go to the place you want to move the drawing to. You can go to another part of the same drawing or to another drawing.
- Choose **Paste** from the **Edit** menu, or hold down the *command* key and type **V**.

Repeat the last two steps if you want to insert the image in more than one place. The image stays on the Clipboard until you cut or copy another image.

Clear

Use **Clear** to erase from the drawing window an area or image you've selected.

To use **Clear**:

- Select the object you want to erase.
- Choose **Clear** from the Edit menu, or press *delete*.

The object you've selected is erased.

Duplicate

Use **Duplicate** to make a copy of an object. **Duplicate** doesn't put a copy of the object on the Clipboard. It's especially useful if you want to use the copy you're making on the same part of the page the original is on.

To use **Duplicate**:

- Select the object you want to duplicate.
- Choose **Duplicate** from the Edit menu.

A copy of the object you selected appears.

Select All

Use **Select All** to select all of the objects that are in the drawing.

Reference

To select all of the objects in the drawing window:

- Choose **Select All** from the **Edit** menu, or hold down the *command* key and type **A**.

Handles appear on all of the objects on the screen, indicating that they're all selected.

Reshape

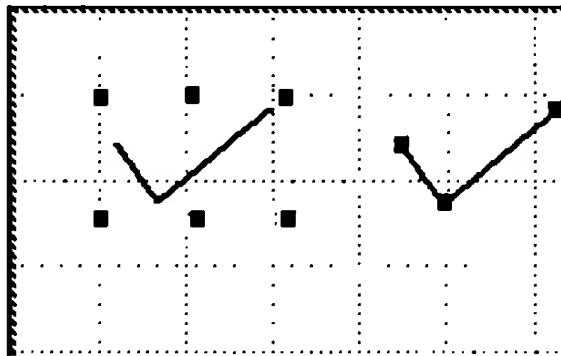
Use **Reshape** to change the shape of a polyline figure or an arc.

Note: If you want to make a polyline figure just proportionally longer or wider, point to any one of its selection handles, hold down the mouse button, and drag the marker box that appears until it's the shape you want. You can change the shape of a rectangle or circle the same way.

To use **Reshape**:

- Select the object you want to reshape.
- Choose **Reshape** from the **Edit** menu.

The handles that indicate the object is selected are replaced by handles at each point where a line ends or two lines meet:



- To reshape an object, point to a handle, hold down the mouse button, and drag the handle to wherever you want the new point to be.

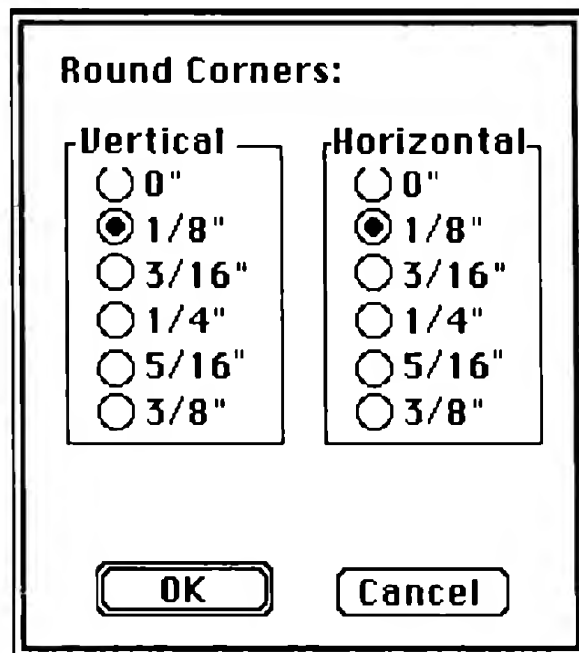
Round Corners

Use **Round Corners** to round the corners of a rectangular figure. You can use **Round Corners** with a rounded rectangle to adjust the shape of its corners.

To use **Round Corners**:

- Select the rectangle you want to give rounded corners.
- Choose **Round Corners** from the **Edit** menu.

This dialog box appears:



Reference

- Select both a vertical and a horizontal setting.

The settings under **Vertical** let you choose how far below the top edge of the rectangle and how far above the bottom edge you want roundness to start. The settings under **Horizontal** let you choose how far in from the left or right edge you want roundness to start. In both cases, the farther from the edge, the rounder the corners are.

The buttons in the box give you these choices:

OK. When you've selected the settings you want, click **OK** to have *Draw Plus* change the corners of the rectangle you selected.

Cancel. Click **Cancel** to return to the drawing window without changing the rectangle you selected. Any settings you've changed are returned to the way they were originally.

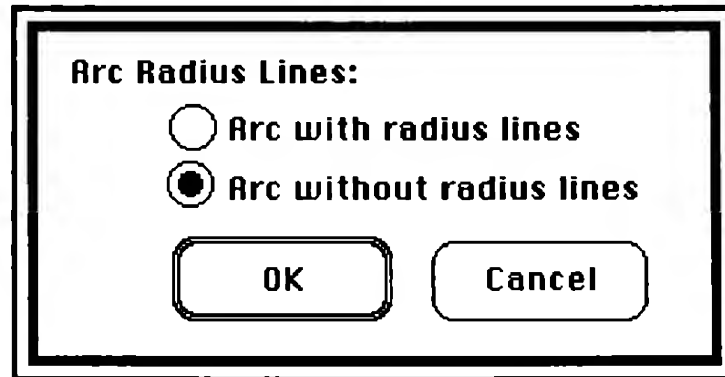
Arc Radius Lines

Use **Arc Radius Lines** to add or remove border lines along the straight sides of an object you've drawn with the arc tool.

To add or remove radius lines:

- Select the arc object you want to change.
- Choose **Arc Radius Lines** from the **Edit** menu.

A dialog box appears.



These are the options you have to choose from:

Arc with radius lines. Adds border lines to the object you've selected.

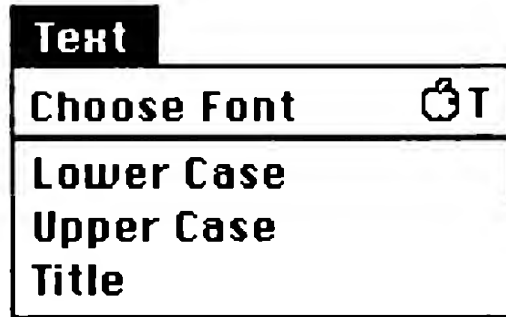
Arc without radius lines. Removes border lines from the object you've selected.

The buttons in the box give you these choices:

OK. When you've selected the setting you want, click **OK** to return to the drawing window and make the change to the object you've selected.

Cancel. Click **Cancel** to return to the drawing window without changing the object you've selected.

Text



Choose Font

Use **Choose Font** to choose a font, font style, and font size.

A font style is created by changing a font in a specific way. For example, if all the characters in a font slant, the style is called *italic*. If all the characters are made thicker and darker, the style is **bold**. Font styles are different from fonts in that you can use more than one style at a time. For example, you can have text that's both *bold and italic*.

To use **Choose Font**:

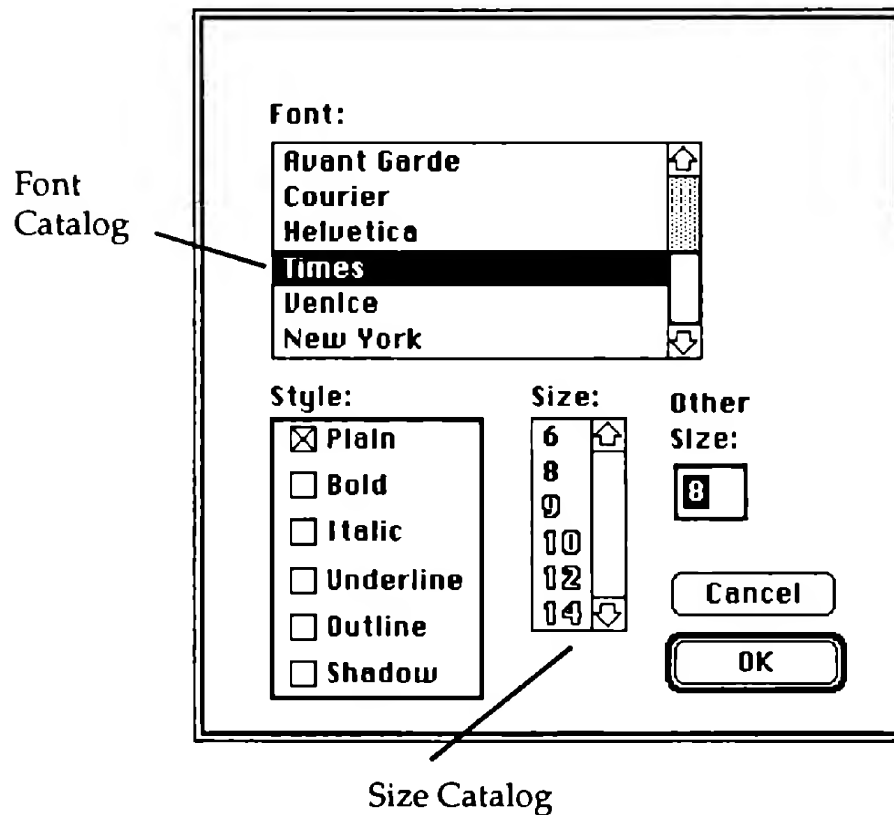
- Select the text tool

- Move the cursor to the point in the drawing where you want to start typing text in the new font.

If you want to change text that's already on the screen, select it.

- Choose **Choose Font** from the **Text** menu.

A dialog box appears.



- Choose a font from the dialog box by scrolling through the font catalog and selecting the one you want.
- Choose a style (or styles) by clicking the check box next to the style (or styles) you want.

Reference

You can use all of the styles except **Plain** at the same time; **Plain** cancels any other styles you've selected. You can also cancel a single style by clicking the check box next to it a second time.

- Set the size of the new font either by selecting a number from the size catalog or by typing a number in the box below **Other Size**.

The numbers that appear in the size catalog are the sizes that the font you've chosen looks best in. If you type a different number in the **Other Size** box, *Draw Plus* scales the font up or down to the size you want, but you might not be satisfied with the result.

The buttons in the box give you these choices:

OK. Click **OK** to accept the new font, style, and size you've chosen.

When you start typing, the text you type appears in the new font, style, and size. If you select text that's already part of the drawing, it immediately changes to the new font, style, and size, and it remains selected.

Cancel. Click **Cancel** to return to the drawing window without changing the font, style, or size.

Lower Case

Use **Lower Case** to change all the uppercase letters in text you've selected to lowercase letters.

To use **Lower Case**:

- Select the text you want to change.

- Choose **Lower Case** from the **Text** menu.

All the uppercase letters in the text you've selected change to lowercase letters.

Upper Case

Use **Upper Case** to change all the lowercase letters in text you've selected to uppercase letters.

To use **Upper Case**:

- Select the text you want to change.
- Choose **Upper Case** from the **Text** menu.

All the lowercase letters in the text you've selected change to uppercase letters.

Title

Use **Title** to make the first letter in every word in a section of text uppercase. (Any uppercase letters that *aren't* at the beginning of a word are changed to lowercase letters.)

To use **Title**:

- Select the text you want to change.
- Choose **Title** from the **Text** menu.

Draw Plus capitalizes the first letter of each word in the section of text you've selected.

Layout

Layout
Show Rulers Custom Rulers...
Turn Grid On Hide Ruler lines
Show Size Hide Page Breaks Drawing size...
Default settings...

Show/Hide Rulers

Use **Show Rulers** to display rulers along the top and left side of the drawing window.

Use **Hide Rulers** to remove the rulers from the drawing window.

To display rulers:

- Choose **Show Rulers** from the **Layout** menu.

The rulers appear along the top and left edges of the drawing window. The item **Show Rulers** on the **Layout** menu changes to **Hide Rulers**.

When rulers are displayed, a dotted line on each of them indicates the position of the pointer.

To remove the rulers:

- Choose **Hide Rulers** from the **Layout** menu.

The rulers disappear from the top and left edges of the drawing window. The item **Hide Rulers** on the **Layout** menu changes to **Show Rulers**.

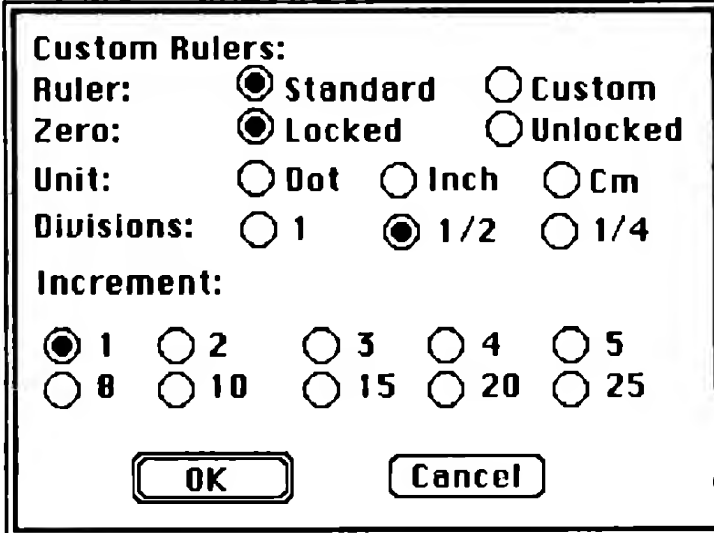
Custom Rulers

Use **Custom Rulers** to create customized rulers for the top and left edges of the drawing window.

To create customized rulers:

- Choose **Custom Rulers** from the **Layout** menu.

A dialog box appears.



The dialog box is titled "Custom Rulers:". It contains several settings with radio buttons. "Ruler:" has "Standard" selected and "Custom" unselected. "Zero:" has "Locked" selected and "Unlocked" unselected. "Unit:" has "Dot", "Inch", and "Cm" unselected. "Divisions:" has "1", "1/2" (selected), and "1/4" unselected. "Increment:" has a grid of radio buttons with "1" selected and others unselected. At the bottom are "OK" and "Cancel" buttons.

Custom Rulers:				
Ruler:	<input checked="" type="radio"/> Standard	<input type="radio"/> Custom		
Zero:	<input checked="" type="radio"/> Locked	<input type="radio"/> Unlocked		
Unit:	<input type="radio"/> Dot	<input type="radio"/> Inch	<input type="radio"/> Cm	
Divisions:	<input type="radio"/> 1	<input checked="" type="radio"/> 1/2	<input type="radio"/> 1/4	
Increment:				
<input checked="" type="radio"/> 1	<input type="radio"/> 2	<input type="radio"/> 3	<input type="radio"/> 4	<input type="radio"/> 5
<input type="radio"/> 8	<input type="radio"/> 10	<input type="radio"/> 15	<input type="radio"/> 20	<input type="radio"/> 25
<input type="button" value="OK"/>		<input type="button" value="Cancel"/>		

Reference

These are the settings you can choose from:

Ruler:

Standard. Click the check box next to **Standard** to return the rulers to the standard ruler settings:

Zero: Unlocked

Unit: Inch

Divisions: 1/2

Increment: 1

Custom. Click the check box next to **Custom** to choose non-standard settings.

Zero:

Locked. Click the check box next to **Locked** to lock the point where the zero markers on the rulers cross in their current location.

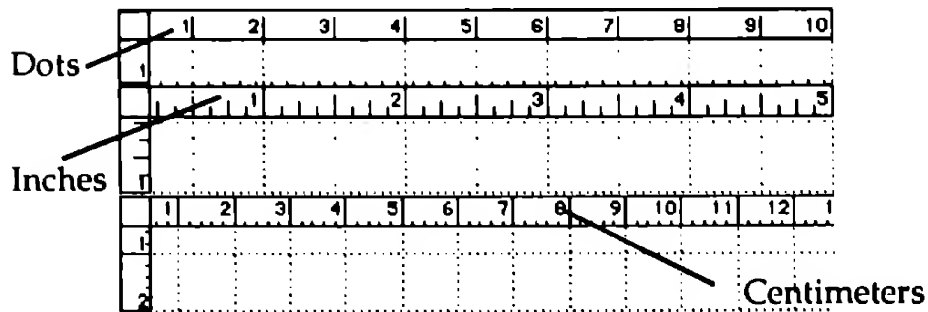
Unlocked. Click the check box next to **Unlocked** to unlock the zero markers on the rulers. (To move the place where the two zero markers cross, point to the square where the two rulers meet, hold down the mouse button, and drag the mouse.)

Unit:

Dot. Click the check box next to **Dot** to make single pixels the unit the rulers are calibrated in.

Inch. Click the check box next to **Inch** to make inches the unit the rulers are calibrated in.

Cm. Click the check box next to **Cm** to make centimeters the unit the rulers are calibrated in.



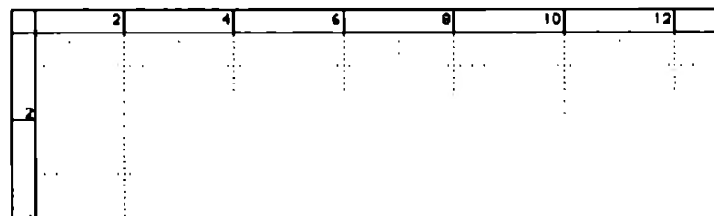
40 dots = 1 inch = 2.54 centimeters horizontally
 36 dots = 1 inch = 2.54 centimeters vertically

Note: Don't confuse *unit* with *increment*. Unit is the standard length you're using to measure the page. Increment is explained below.

Divisions:

1. Click the check box next to 1 if you want tick marks to appear on the rulers only at whole increment values (for more information, see "Increment," below).

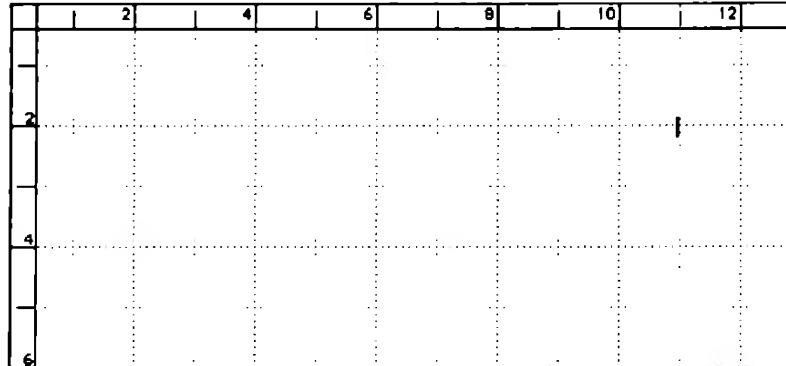
For example, if you've selected 2 as the increment value, the rulers would look like this:



Notice that tick marks at whole increment values are as long as the width of the ruler.

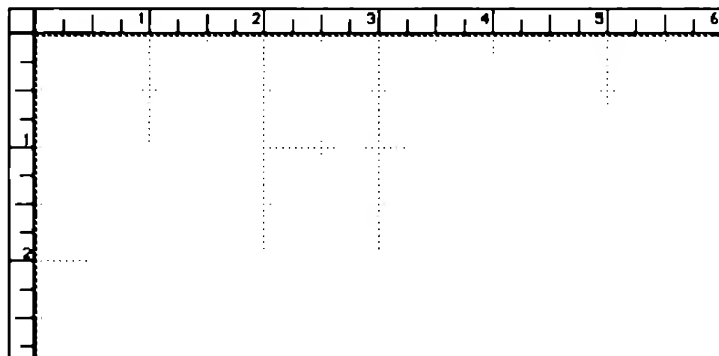
Reference

1/2. Click the check box next to 1/2 if you want tick marks to appear on the rulers at both whole and half increment values, like this:



Notice that tick marks at half increment values are half the width of the ruler.

1/4. Click the check box next to 1/4 if you want tick marks to appear on the rulers at whole, half, and quarter increment values, like this:

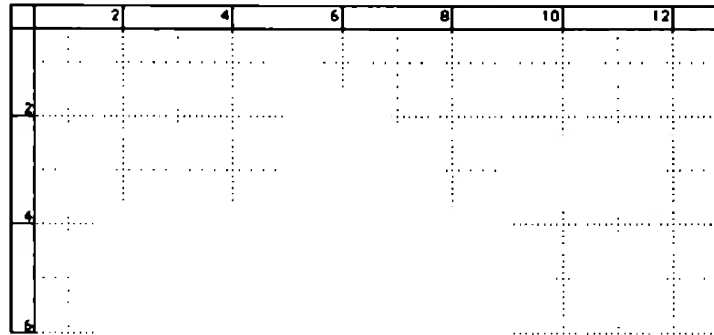


Notice that tick marks at quarter increment values are a fourth the width of the ruler.

Increment:

Click the check box next to the number of units you want in each whole division on the rulers (the whole divisions are marked with tick marks the full width of the ruler).

For example, if you've selected 2 as the increment value, the first tick mark appears two units from the end of the ruler, the next one four units from the end of the ruler, the third one six units from the end, and so on, like this:



The buttons in the box give you these choices:

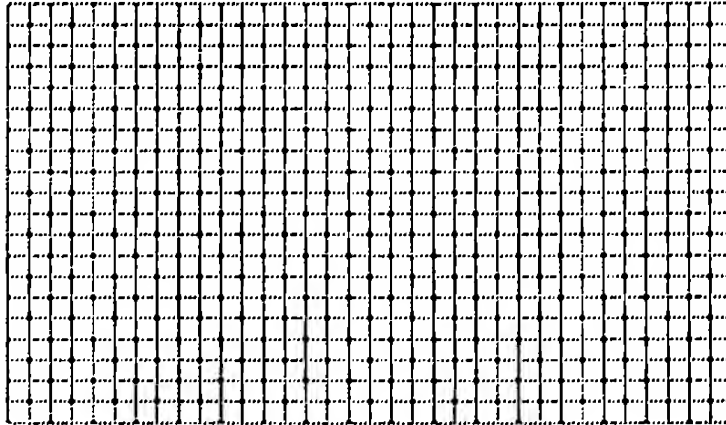
OK. Click **OK** to record the settings and to return to the drawing window.

If the rulers are visible in the drawing window, they change to the new settings (to display the rulers, choose **Show Rulers** from the **Layout** menu). If the ruler lines are visible, they also change to match the new settings (to display the ruler lines, choose **Show Ruler Lines** from the **Layout** menu).

Cancel. Click **Cancel** to return any settings you've changed to the way they were originally and to return to the drawing window.

Turn Grid On/Off

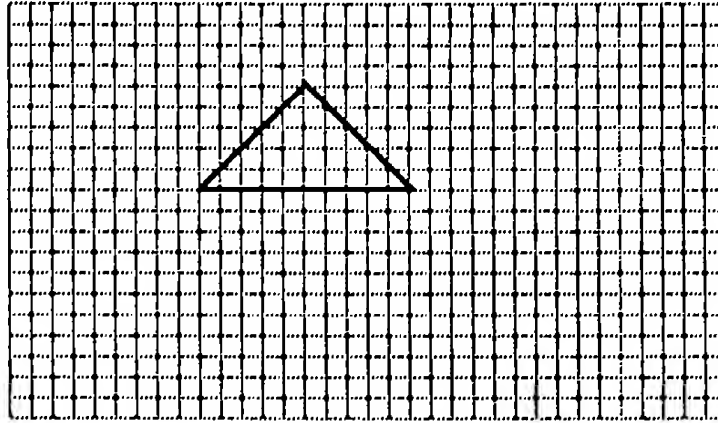
Use **Turn Grid On** to activate an invisible grid that covers the page. The grid is made up of a series of horizontal and vertical lines that intersect every eight pixels.



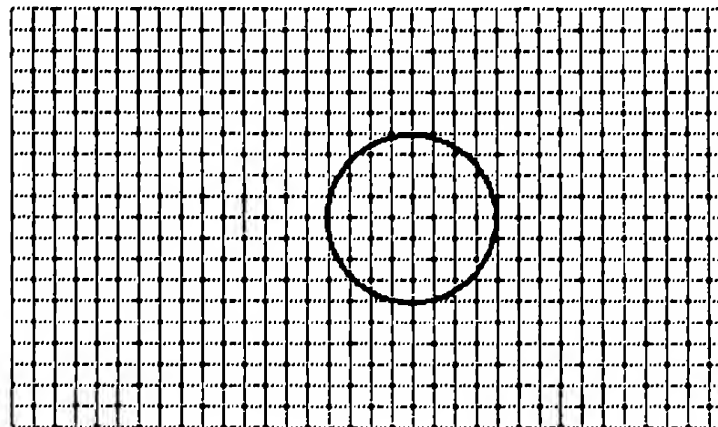
Use **Turn Grid Off** to remove the invisible grid from the page.

The grid lets you position points only where the lines of the grid intersect, so it helps you draw and align certain objects. The grid affects the positioning and movement of the selection box, text, lines, hollow or filled rectangles, hollow or filled ovals, and hollow or filled polygons.

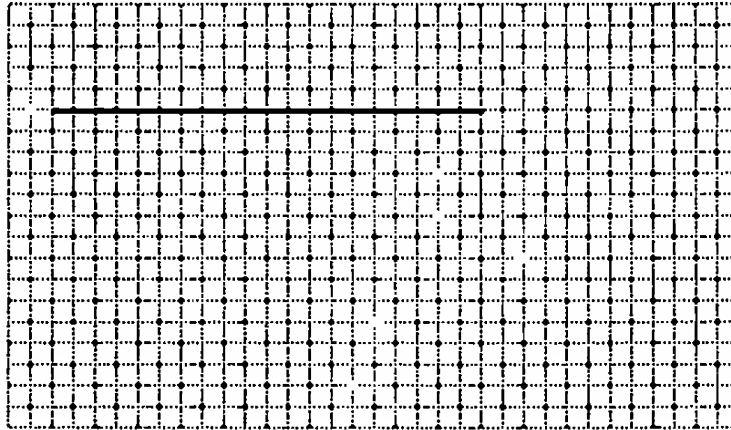
Examples:



The sides of a triangle don't have to follow the lines of the grid, but the triangle's points can only be at points where the lines of the grid intersect.



Neither the circumference of a circle nor the perimeter of an oval will follow the grid, but the sides of a rectangle touching the top, bottom, left, and right edge of either of them can lie only along the lines of the grid.



A line drawn with the line tool does not have to lie along the lines of the grid, but its beginning and end points can be only at intersections of the lines of the grid.

To use the grid:

- Choose **Turn Grid On** from the **Layout** menu.

The appearance of the drawing window doesn't change, but the grid is now active.

Turn Grid On changes to **Turn Grid Off** on the **Layout** menu.

To deactivate the grid:

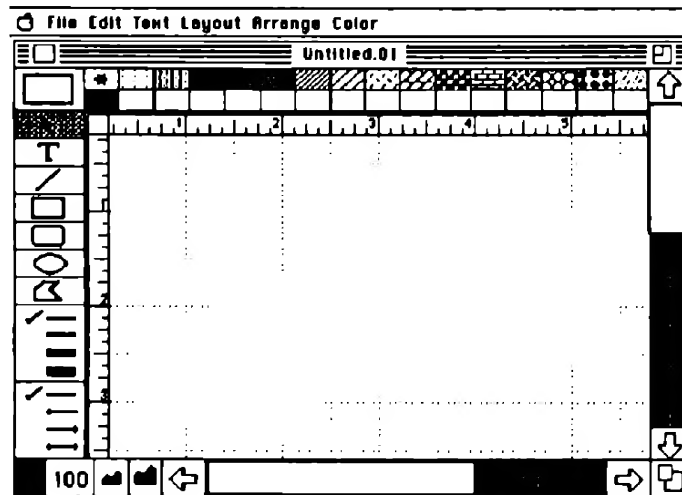
- Choose **Turn Grid Off** from the **Layout** menu.

Once again, the appearance of the drawing window doesn't change, but the grid is no longer active.

Hide/Show Ruler Lines

Use **Hide Ruler Lines** to remove the ruler lines from the drawing window.

Use **Show Ruler Lines** to display the ruler lines in the drawing window.



Note: The ruler lines aren't the same as the grid (for more information, see "Turn Grid On/Off," above).

To hide the ruler lines:

- Choose **Hide Ruler Lines** from the **Layout** menu.

The ruler lines disappear from the drawing window, and the item on the **Layout** menu changes to **Show Ruler Lines**.

Reference

To display the ruler lines:

- Choose **Show Ruler Lines** from the **Layout** menu.

The ruler lines appear in the drawing window, and the item on the **Layout** menu changes to **Hide Ruler Lines**.

Show/Hide Size

Use **Show Size** to display the size of an object or the selection box. The size appears at the bottom of the drawing window to the left of the horizontal scroll bar. It's displayed in the units you've selected for the rulers.

Use **Hide Size** to remove the size display from the drawing window.

To show the size of an object:

- Select **Show Size** from the **Layout** menu.

The size display appears next to the horizontal scroll bar. The selection on the **Layout** menu changes from **Show Size** to **Hide Size**.

To remove the size display:

- Select **Hide Size** from the **Layout** menu.

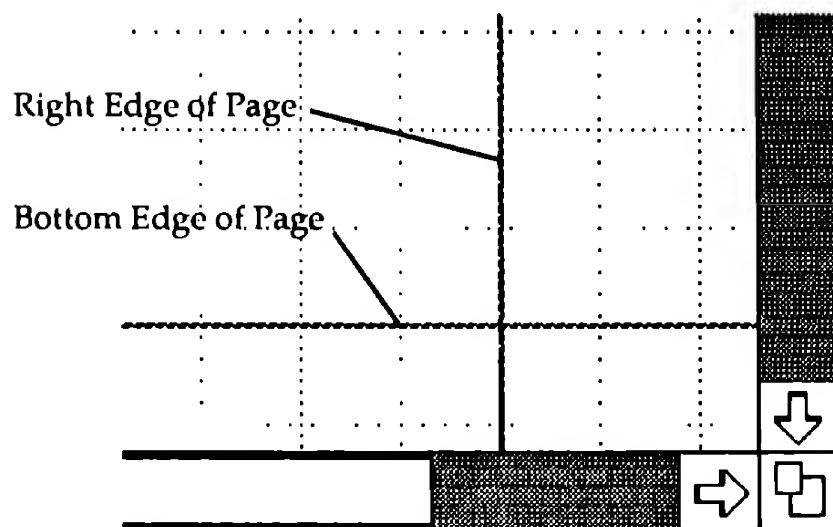
The size display disappears from the drawing window. The selection on the **Layout** menu changes from **Hide Size** to **Show Size**.

Hide/Show Page Breaks

Use **Hide Page Breaks** to remove the page break markers in the drawing window.

Use **Show Page Breaks** to display the page break markers in the drawing window.

The page break markers show how much of a drawing *Draw Plus* will print on the size of paper you've selected in the Page SetUp dialog box. (*Draw Plus* doesn't print all the way to the edges on a piece of paper, so the area marked by the page breaks is always smaller than the area of the paper itself.)



To remove the page break markers:

- Choose **Hide Page Breaks** from the **Layout** menu.

The page break markers disappear from the drawing window. **Hide Page Breaks** changes to **Show Page Breaks** on the **Layout** menu.

Reference

To display the page break markers:

- Choose **Show Page Breaks** from the **Layout** menu.

The page break markers appear on the drawing in the drawing window. **Show Page Breaks** changes to **Hide Page Breaks** on the **Layout** menu.

Drawing Size

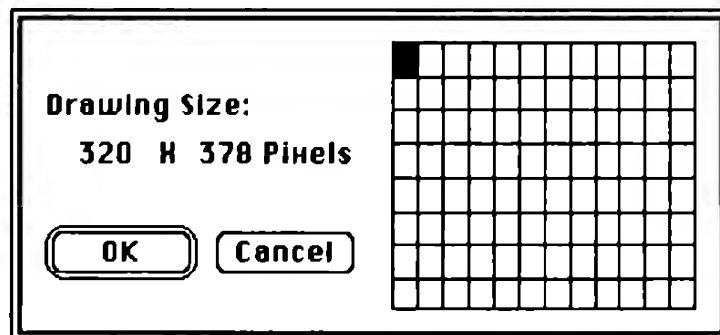
Use **Drawing Size** to change the size of a drawing. **Drawing Size** doesn't change the size of objects or text on the drawing; instead, it changes the size of the area you have to work on.

The size of the drawing can be from 8 1/2 by 11 inches to 96 by 80 inches (*Draw Plus* never prints to the edges of an 8 1/2 by 11 sheet of paper no matter how large the drawing is; the lines that mark the page breaks show you how much of a drawing is printed on one sheet).

To change the size of the drawing:

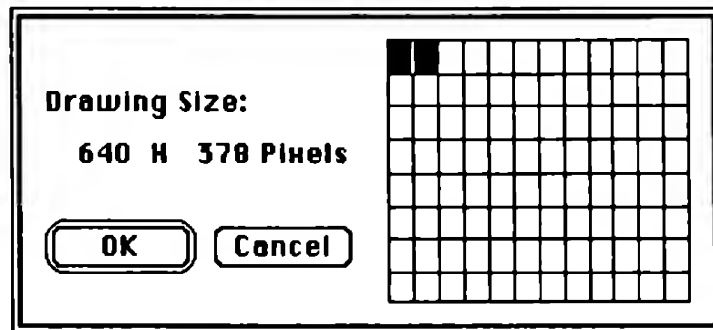
- Choose **Drawing Size** from the **Layout** menu.

A dialog box appears.

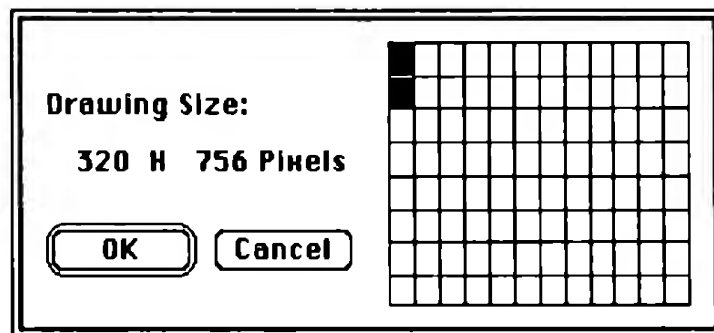


A square that's black is selected. The area marked by selected squares shows the current size of the drawing. Each square stands for a page; the size of the pages is determined by the type of page you've selected in the Page SetUp dialog box. For example, the grid above represents a drawing that's a single page in size.

This one shows a drawing that's two pages wide and one page long:



This one shows a drawing that's one page wide and two pages long:



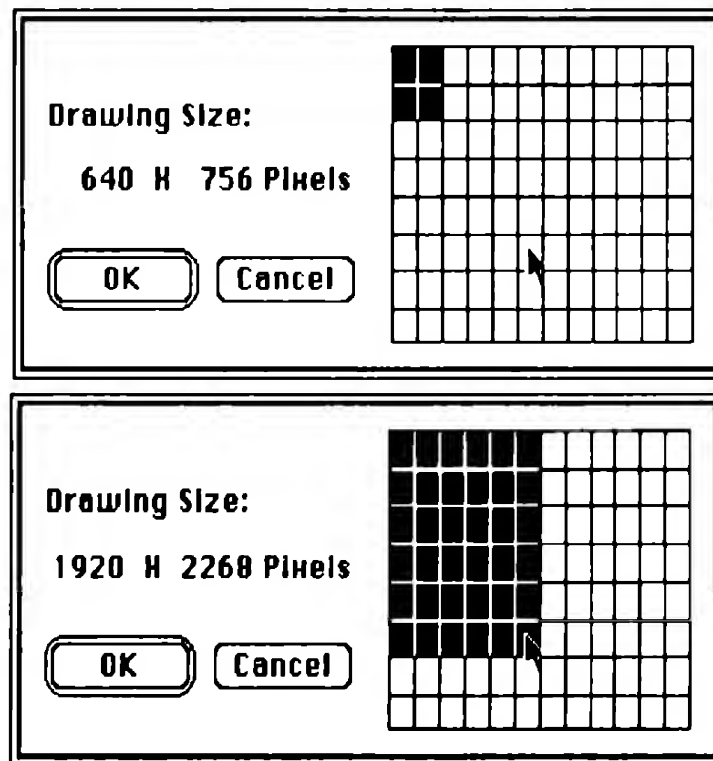
Reference

Each time you add a square to the right of the selected area, you add a page to the width of the drawing. Each time you remove a square, you remove a page from the width.

Each time you add a square at the bottom of the area that's selected, you add a page to the length of the drawing. Each time you remove a square, you remove a page from the length.

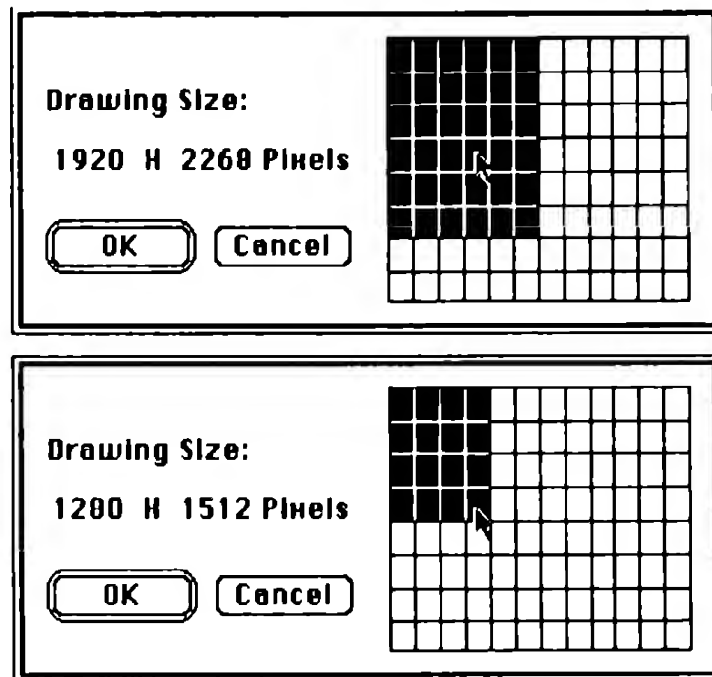
- To add a square, point to it and click the mouse button.

You don't have to select squares one by one. If you point to the square that's in the lower right corner of the total area you want to select and click the mouse button, the entire area is selected.



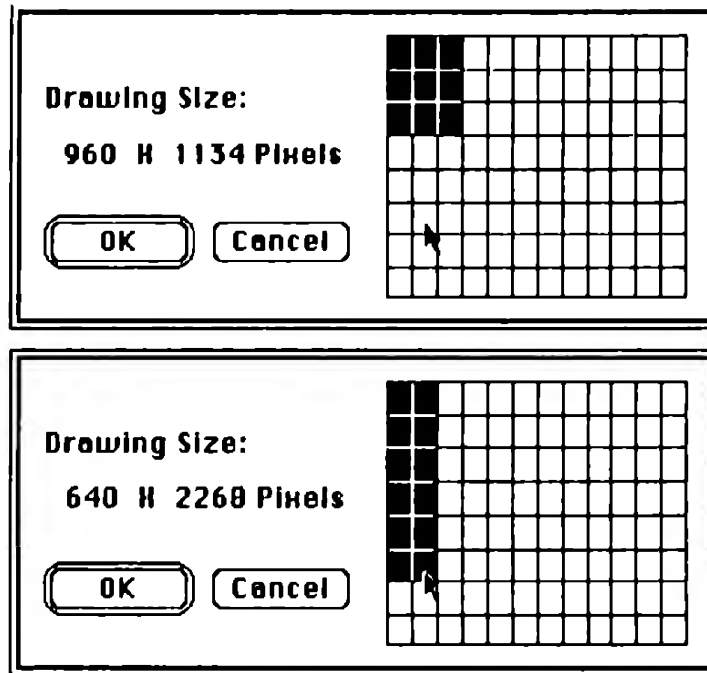
- To remove a square, point to it and click the mouse button.

You don't have to remove squares one by one, either. If you want to select an area that's smaller than the area currently selected, point to the square that's in the lower right corner of the area you want to select and click the mouse button. The smaller area stays selected, but any squares below or to the right of it return to normal.



Reference

You can use the same technique to make the selected area smaller along one edge and bigger along the other at the same time.



The buttons in the box give you these options:

OK. Click **OK** to change the size of the drawing to the size you've selected.

Cancel. Click **Cancel** to return the size to its original setting and to return to the drawing window.

Default Settings

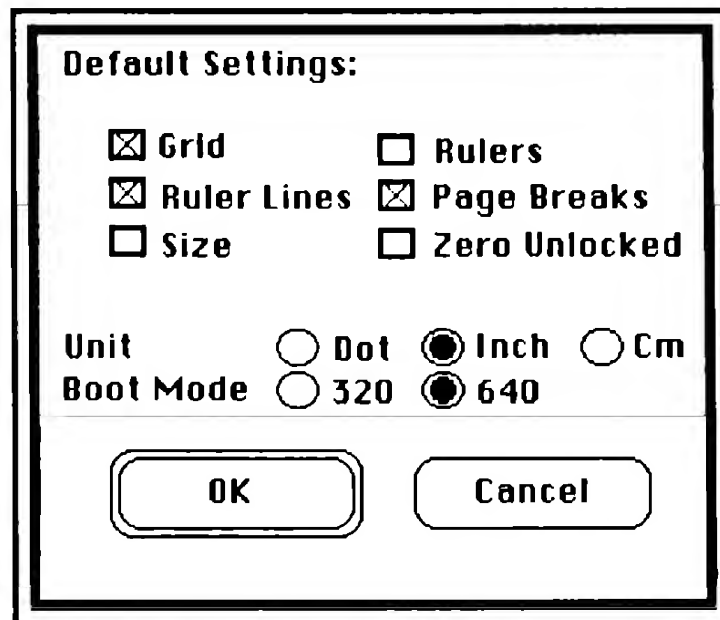
Use **Default Settings** to select the settings you want every new drawing to have. The settings you choose won't have any effect on the current drawing you're working on or any drawings you've already created. The Boot Mode you select won't take effect until you restart *Draw Plus*.

The default settings you choose are saved on your program disk. Make sure the program disk is in the disk drive before you click **OK**.

To use **Default Settings**:

- Choose **Default Settings** from the **Layout** menu.

A dialog box appears.



Reference

These are the settings you can choose:

Grid. Turns the invisible grid on.

Ruler Lines. Displays the ruler lines.

Size. Displays the size of selected objects and the selection box to the left of the horizontal scroll bar.

Rulers. Displays the rulers.

Page Breaks. Displays the page break markers.

Zero Unlocked. Makes it possible for you to move the point where the zero markers on the rulers cross.

Unit:

Dot. Uses dots as the unit the rulers are divided into.

Inch. Uses inches as the unit the rulers are divided into.

Cm. Uses centimeters as the unit the rulers are divided into.

Boot Mode:

320. Displays the drawing in low resolution.

640. Displays the drawing in high resolution.

The buttons in the box give you these choices:

OK. Click **OK** to record the settings you've selected. Every new drawing you start will have the settings you've chosen.

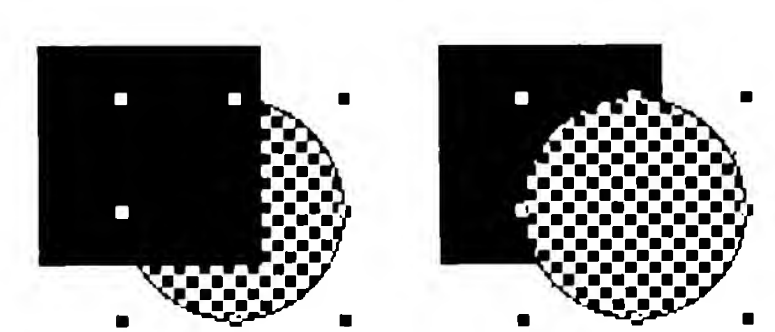
Cancel. Click **Cancel** to return the settings to the way they were before you made any changes and to go back to the drawing window.

Arrange

Arrange	
Move to Front	🍏 F
Move to Back	🍏 B
Rotate Left Rotate Right Flip Horizontal Flip Vertical	
Group	🍏 G
Ungroup	🍏 U
Lock Unlock	
Align to Grid Align Objects...	

Move to Front

Use **Move to Front** to make an object that’s partly hidden by another object (or objects) appear in front of it.



Reference

If an object is completely hidden by another object, you use the **Move to Back** command to make it at least partly visible (for more information, see “Move to Back,” next).

You can also use **Move to Front** to move a group of objects to the front.

To bring a partly hidden object to the front:

- Select the object.
- Choose **Move to Front** from the **Arrange** menu.

The object you’ve selected appears in front of the object (or objects) that it was behind.

Note: An object you’ve brought to the front is in front of every other object in the drawing, even any objects that weren’t originally hiding it. If you move the object, it passes in front of any other object it shares the same space with.

Move to Back

Use **Move to Back** to move an object that’s hiding another object (or objects) behind it.



You can also use **Move to Back** to move a group of objects to the back.

To move an object to the back:

- Select the object.
- Choose **Move to Back** from the **Arrange** menu.

The object you've selected moves behind the object (or objects) that it was in front of (it might disappear behind them completely).

Note: An object you've sent to the back is behind every other object in the drawing, even any objects that weren't originally behind it. If you move the object, it in effect passes behind any other object it shares the same space with.

Rotate Left

Use **Rotate Left** to change the orientation (not the position) of an object by rotating it a quarter turn counterclockwise.



Reference

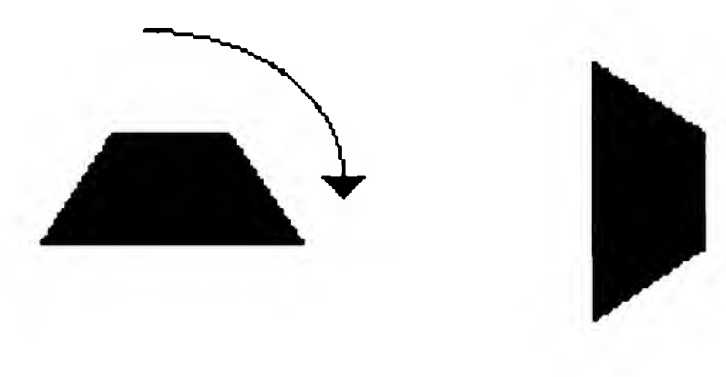
To use **Rotate Left**:

- Select the image you want to rotate.
- Choose **Rotate Left** from the **Arrange** menu.

The object is rotated a quarter turn counterclockwise.

Rotate Right

Use **Rotate Right** to change the orientation (not the position) of an object by rotating it a quarter turn clockwise.



To use **Rotate Right**:

- Select the image you want to rotate.
- Choose **Rotate Right** from the **Arrange** menu.

The object is rotated a quarter turn clockwise.

Flip Horizontal

Use **Flip Horizontal** to change an object to its mirror image. After the object has been flipped, it's reoriented, but not repositioned, in relation to the rest of the drawing.



To use **Flip Horizontal**:

- Select the object you want to flip.
- Choose **Flip Horizontal** from the **Arrange** menu.

The object is changed to its mirror image.

Flip Vertical

Use **Flip Vertical** to flip an object over from top to bottom.



Everything that's on the right stays on the right; everything that's on the left stays on the left. The object is reoriented, but not repositioned, in relation to the rest of the drawing.

Reference

To use **Flip Vertical**:

- Select the object you want to flip.
- Choose **Flip Vertical** from the **Arrange** menu.

The object is flipped from top to bottom.

Note: Flipping an object vertically isn't the same as rotating it twice. See "Rotate Left" and "Rotate Right," above.

Group

Use **Group** to make two or more objects into a single unit. **Group** doesn't change the way the objects look or their spatial relationship, but it lets you handle them as if they were a single object.

You can use **Group** to make two or more groups a single unit.

To group objects:

- Select the objects you want to group.
- Choose **Group** from the **Arrange** menu.

The individual sets of handles that surround each object are replaced with a single set of handles that surround the whole group to let you know you can handle all of the objects as a single unit.

Ungroup

Use **Ungroup** to disconnect objects that you'd made into a group.

You can use **Ungroup** to separate a group of groups into the original groups.

To disconnect objects:

- Select the group of objects you want to separate.
- Choose **Ungroup** from the **Arrange** menu.

The single set of handles that surrounds the whole group is replaced with individual sets of handles that surround each object to let you know that each object is now separate.

Lock

Use **Lock** to set an object so it can't be changed or moved from its present position on the page.

To use **Lock**:

- Select the object you want to lock.
- Choose **Lock** from the **Arrange** menu.

The appearance of a locked object doesn't change, but if you select it and try to change or move it, you can't.

Unlock

Use **Unlock** to reset an object that you've locked so that you can change it or move it from its present position on the page.

To use **Unlock**:

- Select the object you want to unlock.
- Choose **Unlock** from the **Arrange** menu.

The appearance of the object doesn't change, but you can now change or move it.

Align to Grid

Use **Align to Grid** to reposition an object so that it's aligned with the invisible grid you can place over the page.

Align to Grid works only if you've drawn an object when the grid was off and then you turned the grid on. (For information about the grid, see "Turn Grid On/Off" under "Layout" earlier in this section.)

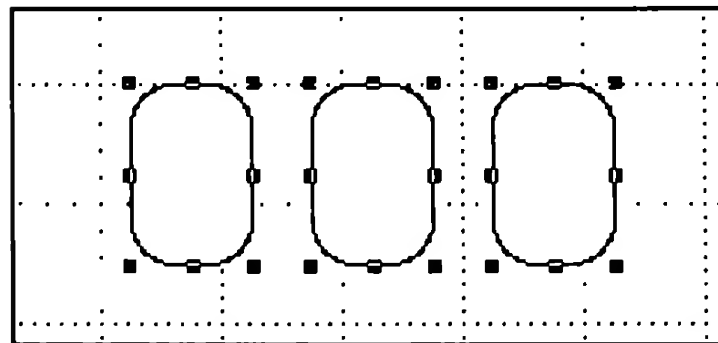
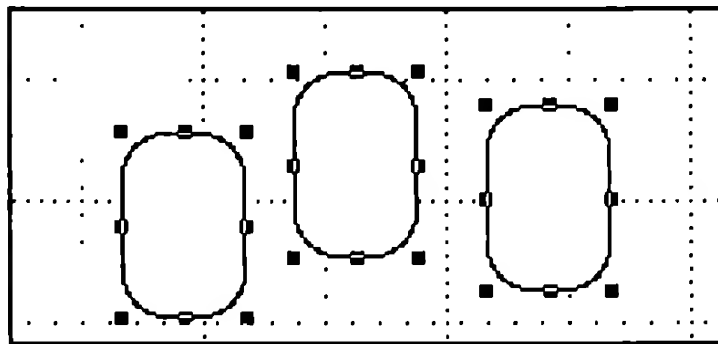
To align an object to the grid:

- Choose **Turn Grid On** from the **Layout** menu.
- Select the object you want to align.
- Choose **Align to Grid** from the **Arrange** menu.

Draw Plus repositions the object you've selected so that its upper left selection handle is aligned with the nearest point on the grid.

Align Objects

Use **Align Objects** to line up two or more objects.

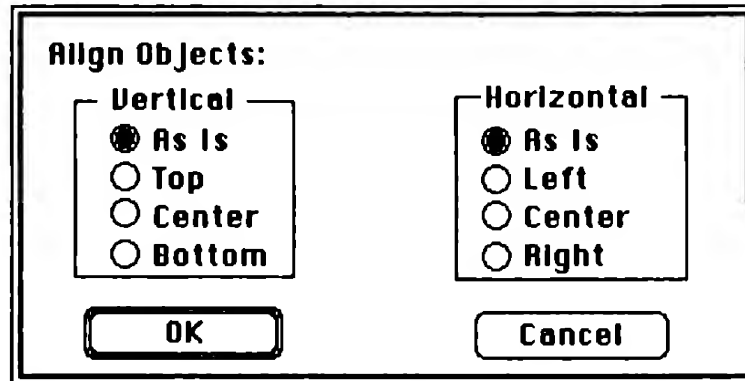


To align objects:

- Select the objects you want to align.
- Choose **Align Objects** from the **Arrange** menu.

Reference

A dialog box appears.



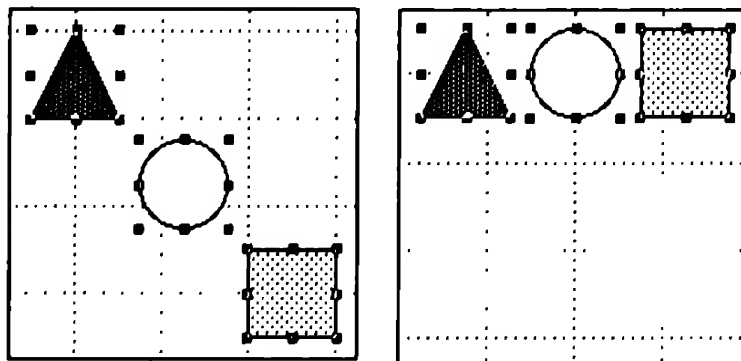
You can align objects vertically (from top to bottom) or horizontally (from left to right), or both at the same time.

These are the settings you can choose from:

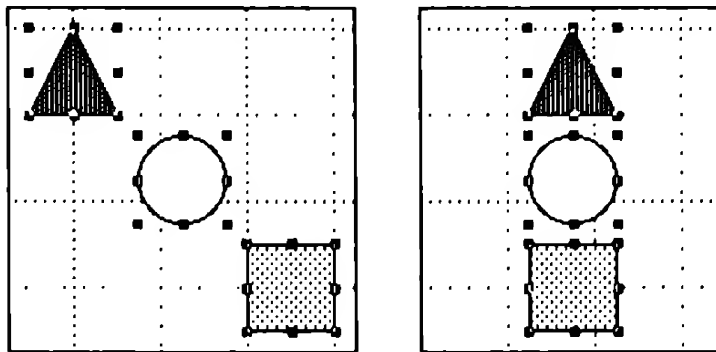
Vertical:

As Is. Click the check box next to **As Is** to leave the top-to-bottom alignment unchanged.

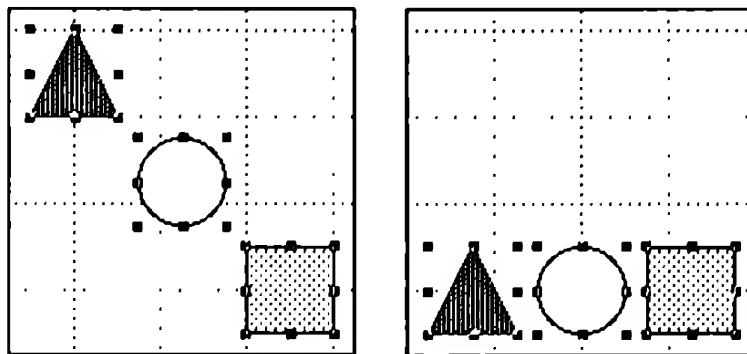
Top. Click the check box next to **Top** to align the top of each object with the top of the highest object.



Center. Click the check box next to **Center** to align the center of each object along a line that's halfway between the top of the highest object and the bottom of the lowest object.



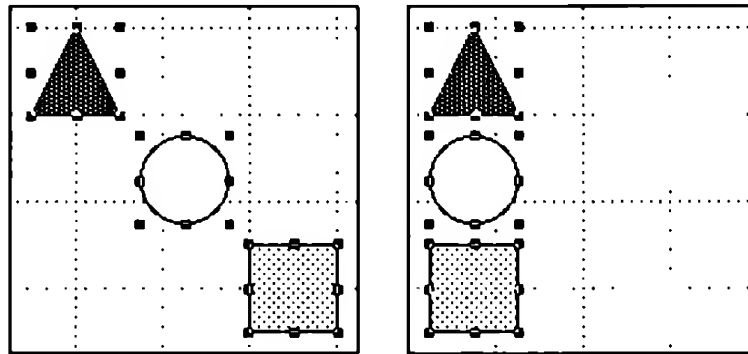
Bottom. Click the check box next to **Bottom** to align the bottom of each object with the bottom of the lowest object.



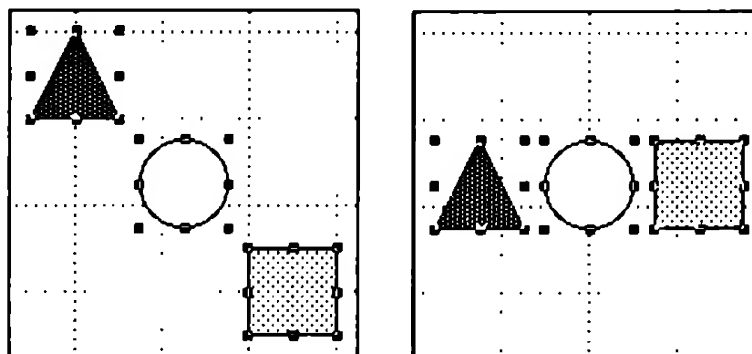
Horizontal:

As Is. Click the check box next to **As Is** to leave the left-to-right alignment unchanged.

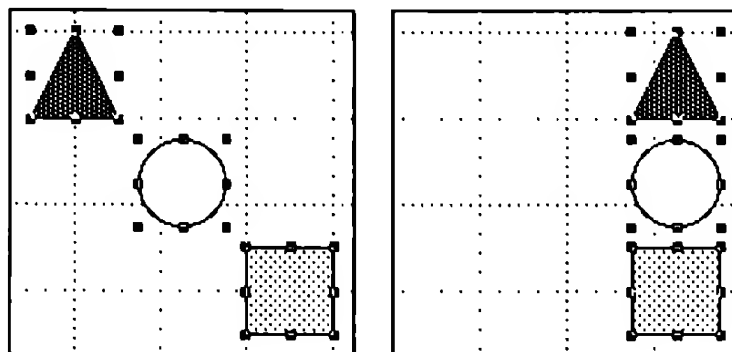
Left. Click the check box next to **Left** to align the left edge of each object with the left edge of the leftmost object.



Center. Click the check box next to **Center** to align the center of each object along a line that's halfway between the left edge of the leftmost object and the right edge of the rightmost object.



Right. Click the check box next to **Right** to align the right edge of each object with the right edge of the rightmost object.



The buttons in the box give you these choices:

OK. Click **OK** to record the settings and return to the drawing window.

The objects you've selected are immediately aligned according to the settings you've chosen. The objects are also temporarily grouped – you can treat them as if they're a single object until you select another object or move the pointer outside the grouping and click the mouse button.

Cancel. Click **Cancel** to return any settings you've changed to the way they were originally and to return to the drawing window.

Color



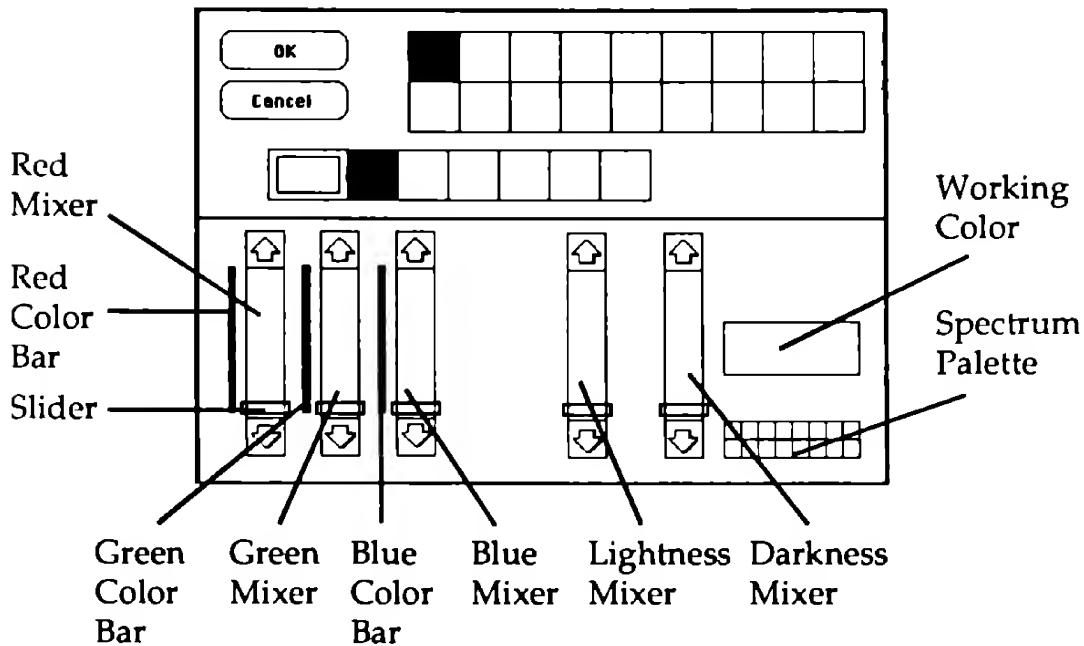
Edit Color

Use **Edit Color** to change the colors in the palette. When you're using low resolution, the color palette contains 16 colors; when you're using high resolution, it contains 4 colors plus black and white. If you want to use colors different from the ones now in the palette, you can choose others from the 4096 colors that *Draw Plus* can produce.

To use Edit Color:

- Choose **Edit Color** from the **Color** menu.

The Edit Color window appears.



The five vertical bars of color in the lower half of the screen are the color mixers.

The three on the left each control one of the primary colors. The one on the left is for red, the one in the middle for green, and the one on the right for blue. Next to each of them is a color bar that shows the range of the intensities available, from brightest to black. Don't confuse the brightness of a color with lightness. The brightest red is the reddest, most intense red. The lightest red is a little red mixed with a lot of white – in other words, a pale pink.

Reference

The two mixers on the right side of the dialog box control the shade – the lightness or darkness – of a color.

The mixer on the left makes the color lighter, the one on the right makes it darker.

The working color reflects the positions of the slides on the mixers. Every change in the position of the slides produces a different color.

You can move the slides up and down to change the amount of red, green, and blue in the working color or to lighten or darken it.

The spectrum palette in the lower right corner displays the basic spectrum of colors: the primary, secondary, and neutral colors (brown, gray, white, and black).

If you're using low resolution, the palette that divides the screen in half is a copy of the one in the drawing window; if you're using high resolution, the palette shows the four basic colors that the colors in the drawing window are mixed from.

To scan the colors available:

- First, position the pointer on the color in the spectrum palette that's closest to the color you want (for example, if you want khaki, position the pointer on brown).
- Hold down the mouse button.

A dotted outline appears around the color.

- Drag the dotted outline to the working-color box and release the mouse button.

The color in the box changes to the color you've selected from the spectrum palette, and the slides on the mixers take their positions for that color.

Each of the mixers shows 16 different variations on the color you've selected. For example, the green mixer shows 16 variations with more or less green mixed in.

The lightness and darkness mixers show variations with more or less white mixed in.

If you don't see the color you want, position the pointer on the variation closest to it, and drag the variation to the working-color box. When you release the mouse button, a different set of variations appears.

If you're working in low resolution:

There's a window in the upper half of the screen. If you want to see what a color looks like on your picture, move the pointer to the window. The pointer turns into a paintbrush, and you can draw on the picture there with perfect safety – whatever you draw is automatically undone when you return to the drawing window.

If you're working in high resolution:

A palette containing the 16 mixed colors appears in the upper half of the screen. As you change the 4 basic colors, the colors in the upper palette change to show you the effect on the 16 mixed colors.

To add a color to a palette:

- Position the pointer on the color you want to add and hold down the mouse button.

Reference

- Drag the dotted outline to the palette in the middle of the screen and replace one of the colors there with the new color.

Be careful if you replace a color you've used in the drawing because the old color will be replaced by the new color everywhere you used it in the drawing.

There are two changes to be wary of: changing the colors at the two ends of the palette – the colors preset to black and white. If you replace white with another color, that color instantaneously replaces white as the background color of the easel. Don't replace it with black or the screen becomes unreadable. Something similar happens if you replace black with another color. That color instantaneously replaces black as the text and outline color of the easel. Don't replace it with white. If you happen to replace either color with a color that makes the screen unreadable, press the `esc` key to undo the change.

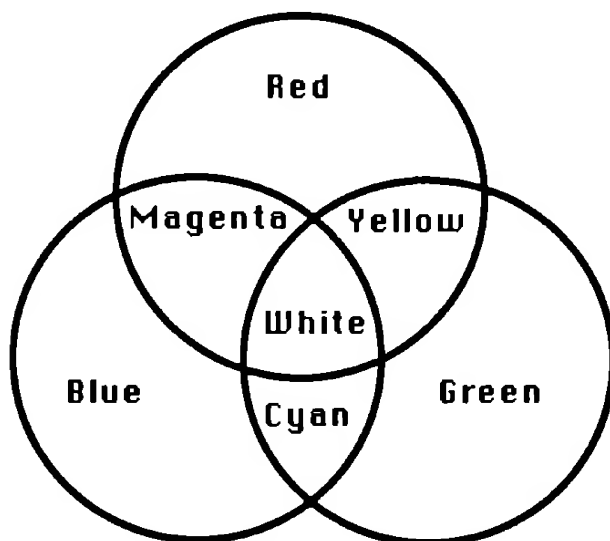
To mix a color:

- Move the slides on the red, green, and blue mixers up and down.

Mixing colors is mostly a matter of experimenting until you get the mix you want, but it may help you to understand how the process works.

When you mix colors using *Draw Plus*, you're actually mixing light of different colors. Mixing light is different from mixing paint. The major difference is that if you mix all the colors of paint together, the result is black; when you mix all the colors of light together, the result is white.

As the color chart below shows, the three primary colors of light are red, green, and blue. Mixing red and blue produces magenta, mixing blue and green produces cyan, and mixing green and red produces yellow. Mixing all three together produces white.



To mix a color, move the slides on the three color mixers up and down. You can move the slides either by clicking the arrows or by dragging the slide with the pointer.

The mixers work like dimmers: if you move the slide to the bottom, you turn the color up as far as it can go; if you move the slide to the top, you turn the color off.

Examples:

To get white, turn up all of the hue mixers to their highest level. "White" light is made up of all the colors of the spectrum – all of which can be derived from the three primary colors, red, green, and blue.

Reference

To get yellow, turn up the red and green mixers all the way, and turn the blue mixer off.

To get green, turn the green mixer all the way up, and turn the red and blue mixers off.

To get black, turn all of the mixers off. Black means there's no light.

You can also mix color with black and white patterns and create new patterns using any (or all) of the sixteen colors in the palette.

The buttons in the window give you these choices:

OK. When you've made all the changes to the palette you want to make, click **OK** to go back to the drawing window.

The new palette is saved when you save the picture you're working on. You can also save the palette separately in the **Color Table** (see "Color Table," below, for instructions).

Cancel. To return to the drawing window without keeping any of the changes you've made, click **Cancel**.

Color Table

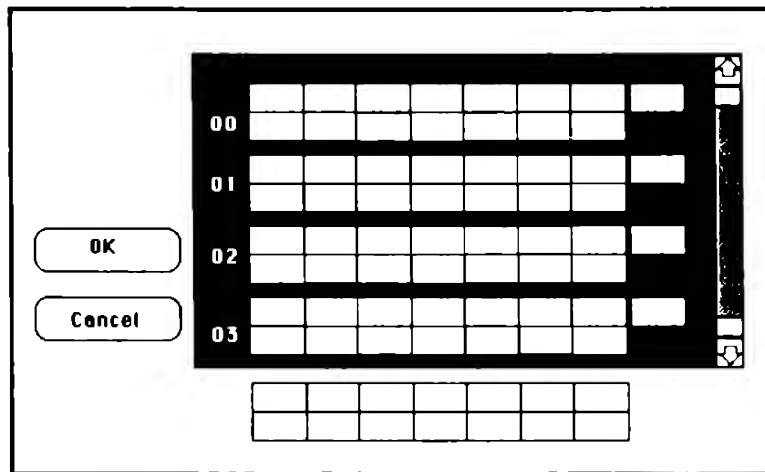
Use **Color Table** to save palettes you may want to use again in the future. You can save up to 128 different palettes.

To save a palette:

- Make sure the *Draw Plus* program disk is in the active disk drive.

- Make any changes you want to the screen palette using the Edit Color window.
- Choose **Color Table** from the **Color** menu.

When the Color Table window appears, the palette you've been using is displayed at the bottom of the screen.



- Scroll through the palette bank to find either a blank space or a palette you don't use anymore. Use palette number 00 if you want the palette you're saving to be the one that appears in the drawing window whenever you start *Draw Plus*.
- Drag the palette at the bottom of the screen to the space where you want to store it.

The buttons in the window give you these choices:

OK. Click **OK** to save the palette and return to the drawing window.

Cancel. Click **Cancel** if you decide not to save the palette.

Reference

To get a palette from the **Color Table**:

- Make sure the *Draw Plus* program disk is in the active disk drive.
- Choose **Color Table** from the **Color** menu.
- Scroll through the **Color Table** until you find the palette you want, then drag it to the palette at the bottom of the screen.

The buttons in the window give you these choices:

OK. Click **OK** to return to the drawing window with the new palette.

Cancel. Click **Cancel** if you decide not to get a palette.

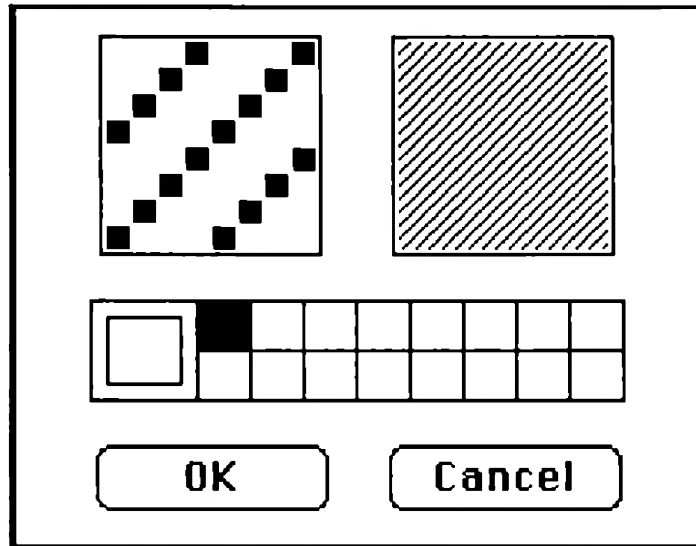
Edit Pattern

Use **Edit Pattern** to change the patterns in the palette at the top of the screen. The only way to create a pattern with color in it is by using **Edit Pattern**.

To use **Edit Pattern**:

- Select the pattern you want to edit from the palette.
- Choose **Edit Pattern** from the **Color** menu.

The Edit Pattern window appears.



The pointer works like this:

- If you want to erase a pixel, select white from the palette in the Edit Pattern window, position the pointer on the pixel and click.
- If you want to add color to a pattern, select the color from the palette in the Edit Pattern window, position the pointer and click. You can remove a pixel you just added by clicking a second time.
- You can use the pointer to draw a line. To do so, hold down the mouse button as you move the mouse.

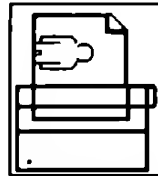
The buttons in the window give you these choices:

- Click **OK** to replace the old pattern with the new one.
- Click **Cancel** to keep the original pattern.

The pattern you create is saved with the drawing.

Icon Chooser

Use **Icon Chooser** first to create icons and then to select the ones you want to use. An *icon* is a kind of sign – it's a simple, small picture that stands for something else. For example, these are the icons *Draw Plus* uses for the polyline tool, a warning, and a paper orientation:



Wide

You can also use **Icon Chooser** to create and use small pictures, like the ones below, that aren't true icons.

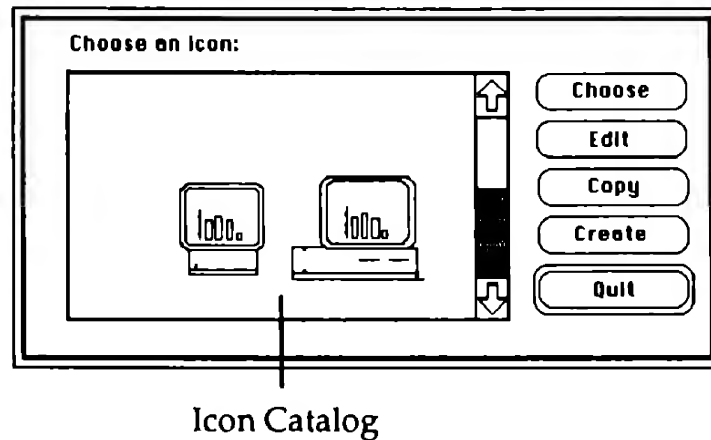


You can't change the size of an icon as you can other objects. But the size of an icon does change when you use the zoom boxes to change the scale of the drawing you're using icons in.

To use **Icon Chooser**:

- Choose **Icon Chooser** from the **Color** menu.

A dialog box appears.



If there are more icons in the icon catalog than can fit in the icon catalog window, click the up and down arrows to scroll through the catalog.

The icon that's selected has a box around it.

- To select an icon, point to it and click the mouse button.

The buttons in the box give you these choices:

Choose. Click **Choose** to put a copy of the icon that's selected in the drawing window.

The **Icon Chooser** dialog box disappears, and the icon you've chosen appears in the upper left corner of the drawing window. The icon is automatically selected so you can work with it immediately.

Reference

Edit. Click **Edit** to go to the Edit window and work on the selected icon.

The Edit window appears, and the icon you selected is displayed in the working area.

Copy. Click **Copy** to go to the Edit window and work on a copy of the icon that's selected.

The Edit window appears, and a copy (not the original) of the icon you selected is displayed in the working area.

Create. Click **Create** to go to the Edit window and create a new icon.

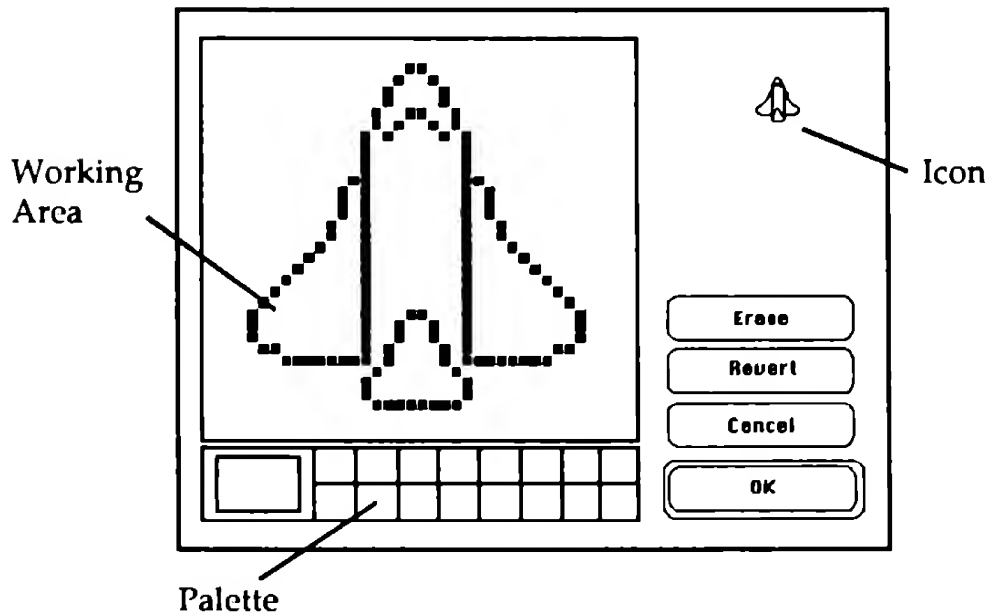
The Edit window appears. The working area is blank.

Quit. Click **Quit** to return to the drawing window without choosing, editing, copying, or creating an icon. If you've already created an icon and it appears in the icon catalog, **Quit** doesn't remove it; if you've already made changes to an icon, **Quit** doesn't undo those changes.

To create or edit an icon:

- Click **Create**, **Copy**, or **Edit**.

The Edit window appears. It looks like this:



If you clicked **Edit**, the icon you selected from the icon catalog appears in the upper right corner of the screen, and an enlarged version of it appears in the working area.

If you clicked **Copy**, the copy of the icon you selected appears in the upper right corner of the screen, and an enlarged version of the copy appears in the working area.

If you clicked **Create**, the icon you're creating appears in the upper right corner of the screen as you create an enlarged version of it in the working area.

Reference

Each square in the working area represents a pixel.

- To draw, select a color from the palette, point to the place in the working area where you want to draw a pixel, and click the mouse button. If you want to draw a line or color an area, hold down the mouse button while you move the mouse.
- To erase, select white and either point to a single pixel and click, or hold down the mouse button while you move the mouse over the line or area you want to erase.
- To undo a change, either point to a single pixel and click, or hold down the mouse button while you move the mouse over the line or area you want to change.

The buttons in the box give you these choices:

Erase. Click **Erase** to erase the working area.

Revert. Click **Revert** to erase the current version of the icon and return to the version you started with.

Cancel. Click **Cancel** to return to the Icon Chooser dialog box without editing or creating an icon.

OK. Click **OK** to save the icon you've edited or created and to return to the Icon Chooser dialog box.

To delete an icon:

- Select the icon you want to delete in the Icon Chooser dialog box.
- Click **Edit**.
- When the **Edit** window appears, click **Erase**, then click **OK**.

The Icon Chooser dialog box reappears, and the icon has been deleted from the icon catalog.

Icon Editor

Use **Icon Editor** to make changes to an icon once you've added it to a drawing. The changed icon is not saved in the icon catalog.

To edit an icon:

- Select the icon you want to change.
- Choose **Icon Editor** from the **Color** menu.

The Edit window appears. The Edit window works just like it does when you're creating an icon. See "Icon Chooser," above.



Glossary

active window

The window that's in front of all the others; its title bar has four parallel lines stretching from one end to the other. It's the window where you're currently working.

Apple menu

The menu at the far left end of the menu bar; it appears when you select the Apple.

border

The lines that form the hollow shapes, the outlines of the solid shapes, and the lines drawn with the straight line tool are borders. The line with the check mark beside it in the border palette (on the left side of the drawing window) determines the width and color or pattern of borders.

button

A symbol in a dialog box that you click to make something happen. To find out what a specific button does, see the name of the button.

Cancel button

The button in a dialog box that lets you leave the dialog box without carrying out a command.

caps lock

After you press the *caps lock* key, any letter that you type appears in uppercase without your having to hold the *shift* key down. Press the *caps lock* key again, and the keyboard returns to normal. The *caps lock* key doesn't affect numbers or symbols.

Glossary

catalog

The list of drawings that are on a disk. Catalogs appear in the Open and Save As dialog boxes.

change size box

A box on the bottom-right corner of some active windows. Dragging the change size box changes the size of the window.

character keys

Character keys repeat when you hold them down. The character keys are: letters, numbers, symbols, punctuation, *return*, *tab*, and the spacebar.

check box

The small box or circle next to an option in a dialog box that you click to select or cancel an option.

choose

To pick a command from a menu.

click

To position the pointer on something and then press and quickly release the button on the mouse.

Clipboard

The place where objects you've cut or copied are placed. The objects stay on the Clipboard even after you've pasted them elsewhere in the drawing until you cut or copy another object.

close

To remove a window from the screen.

close box

The small square on the left side of the title bar of an active window. Click it to close the window.

command

A command is a choice you make from a menu that causes some action to take place, or a combination of the *command* key and a letter on the keyboard that causes the same action.

***command* key**

A key that, when held down while another key is pressed, causes a command to take effect, or when held down, lets you drag a window to a new location without activating it.

cursor

A blinking vertical bar that marks the spot in a drawing where something will be added or removed. The cursor is also found in some dialog boxes.

cut

To remove something from a drawing by selecting it and then choosing **Cut** from the **Edit** menu. The object you cut is placed on the Clipboard. See also Clipboard.

delete

The key that moves the cursor backwards, erasing the character that's to the left of it.

dialog box

A box with a message that asks you for a decision or for more information. Sometimes the message informs you that you can't do what you're trying to do or warns you that what you're about to do will destroy some information.

dimmed

A dimmed command, menu title, or option is one that appears gray rather than black. It means you can't use the item.

double-click

To position the pointer on something and then to twice press and quickly release the mouse button.

drag

To position the pointer on something and hold the mouse button down while you move the mouse. You release the mouse button to choose a menu item or when you've reached the location where you want to move an object.

drawing

A drawing contains not only objects, but also text, the text's format (font, type, style, margins, and so on), pictures you've added, and anything else you've made part of the drawing.

drawing window

A window that displays a drawing.

enter

A key that confirms or ends an entry or sometimes a command.
Note: If you're using an Apple II that has been upgraded to an Apple II GS, there's no *enter* key.

folder

A file you create in which you can keep together drawings that are related (for example, a series of drawings for a presentation).

font

A complete collection of letters, numbers, punctuation marks, and other symbols with a characteristic appearance. An example of a font is *Geneva*.

font size

The overall size of characters in text. Font sizes are given in points (for example, 12 point and 18 point).

full size box

A box at the right edge of a drawing's title bar that gives you a full screen view of the drawing when you click it. Clicking it a second time returns the drawing to its normal size.

grid

An invisible guide that pulls objects you draw into certain positions. See also "ruler lines," below.

handles

The squares around the edges of an object that let you know the object is selected.

highlight

To change the color of the background to make something stand out. Highlighting usually shows that an item has been selected from a menu.

I

The pointer you use to position the cursor in the text.

Glossary

icon

A simple, small picture that represents an object (such as a concept, or a message). Also a small picture you draw and that *Draw Plus* treats as an object.

launcher

The program that gives you access to the entire Apple IIGS system. The launcher shows you a list of the files on the disk that's in the disk drive and lets you choose the one you want to start.

memory

The place in the computer where information is stored.

menu

A list of commands that appears when you point to and press a menu title in the menu bar. Dragging through the menu and releasing the mouse button while a command is highlighted chooses that command.

menu bar

The horizontal strip at the top of the screen that contains menu titles.

menu title

A word or phrase in the menu bar that designates one menu. Pressing on the menu title causes the title to be highlighted and its menu to appear below it.

open

To retrieve a drawing you've saved on a disk.

option

A key used like the *shift* key to give an alternate interpretation to another key you type.

paste

To place the contents of the Clipboard - whatever was last cut or copied – in the drawing.

pointer

A small shape on the screen that follows the movement of the mouse. The pointer can be an arrow, an I, or a wristwatch.

press

To position the pointer on something and then hold down the mouse button without moving the mouse. In reference to keys, it means to strike the key lightly, holding it down only if you want to repeat a character.

return

A key that causes the cursor to move to the beginning of the next line of text. It's also used in some cases to confirm or terminate a command or an entry.

rounded rectangle

A rectangle with rounded corners.

ruler lines

A grid that appears in the drawing window that helps you align objects with the marks on the rulers. See also "grid."

rulers

Guides marked in inches, centimeters, or dots that you can display along the top and left sides of a drawing.

Glossary

save

To store information on a disk.

scroll

To move a drawing or directory in its window so that a different part of it is visible. You can also scroll the directory in the Open dialog box.

scroll arrow

An arrow on either end of the scroll bar. Clicking a scroll arrow moves the drawing or directory one line. Pressing a scroll arrow scrolls continuously.

scroll bar

A rectangular bar that may be along the right or bottom of an active window. Clicking or dragging the scroll bar causes the view of the drawing or directory to change.

scroll box

The white box in the scroll bar. The position in the scroll bar indicates the position of what's in the window relative to the entire drawing.

select

To designate which object the next action will affect. You use the mouse techniques of clicking, double-clicking, and *shift*-clicking to select something.

shift

A key that, when pressed, causes subsequent typed letters to appear in uppercase and causes the upper symbol to appear when numeric or symbol keys are typed.

shift-click

A technique that lets you select more than one object at the same time by pointing to the object you want to add to the group you've selected and holding down the *shift* key while clicking the mouse button.

spacebar

The long, unlabeled bar on the keyboard that you press to type a space.

style

A variation of a font. *Draw Plus* has these font styles: plain text, bold, italic, underline, outline, and shadow.

title bar

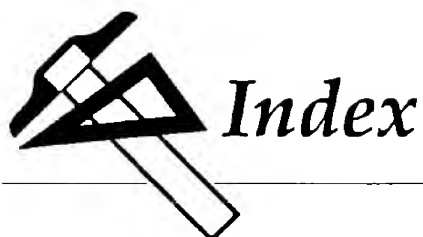
The horizontal bar at the top of a window that shows the name of the window's contents and lets you move the window.

window

The area that displays information on the drawing board. You view a drawing through a window. You can open or close a window, move it around on the drawing board, and sometimes change its size, scroll through it, and edit its contents.

zoom boxes

Two small boxes in the lower right corner of the drawing window that let you increase or decrease the scale of the drawing.



Index

About command, 109-110
active window, 43, 195
aligning objects, 70, 172-177
Align to Grid command, 70, 172
Align Objects command, 173-177
Apple menu, 109, 195
AppleTalk, 40, 121-122
arc, 9, 10, 63, 101, 102
Arc Radius Lines command, 140-141
Arrange menu, 65, 95, 165-177
arrowheads, see: arrow palette
arrow palette, 12, 104-105
asterisk, 30

boldface, 4, 47
border lines, see: lines
border palette, 9, 10, 11-12, 93, 103-104

Cancel button, 195,
catalog, 45, 196
Change Resolution command, 110-111
change size box, 13, 14, 108, 196
Choose Font command, 49, 95, 142-144
Choose Printer command, 41, 119-122
circle, 10, 92
Clear command, 25, 137
Clipboard, 59, 60, 61, 113, 135, 136, 137, 196, 201
 Clock command, 111
close box, 13, 14, 91, 93, 107, 197
Close command, 43, 93, 115
closing a drawing, 42-44
Color menu, 71, 95, 178-193
color mixers, 73-75, 183

Index

- color palette, 73, 111
 - saving, 76, 115, 184
- color/pattern palette, 12, 31, 73, 106-107
- Color Table command, 76, 184-186
- colors, 1, 10, 71 see also: color/pattern palette
 - changing, 75-76, 111
 - editing, 73-78, 178-184
 - selecting, 12, 75, 103
 - testing, 75
 - using, 30
- compressing an object, 62
- Control Panel, 5, 121-122
- Copy command, 59-60, 94, 135-136
- copying
 - objects, see: Copy command
- corners, rounding, 64-65
- Create Paint files command, 119
- cursor, 48, 197, 199
- Custom Rulers command, 88-90, 147-152
- Cut command, 60-61, 94, 135-136

- Default Settings command, 163-164
- Desk Accessories menu, 121-122
- diagonal lines, 91, 92
- dialog boxes, 93, 197
- disk, 2, 37, 39 see also: program disk
- Disk button, 7, 39, 40
- Draw Plus program disk, 2, 5, 7, 39, 81
- drawing board, 8, 13, 100
- drawing size, 13, 14, 83-87
- Drawing Size command, 83, 158-162
- Duplicate command, 60, 94, 137
- drawing window, 6, 8, 10, 11, 13, 18, 91, 100, 101, 198

Edit menu, 23-24, 25, 94, 134-141
Edit Color command, 73-77, 95, 178-184
Edit Pattern command, 71-72, 186-188
enlarging objects, 26-27
erase, see: Clear command
expanding a drawing window, see; full size box

File menu, 15, 38, 93-94, 112-133
filling, 10, 30-31, 58, 68, 103
Flip Horizontal command, 67-68, 169
Flip Vertical command, 68, 169-170
flipping objects, 67-68, 169-170
font catalog, 50
fonts, 1, 24, 47, 49-52, 142-144, 199
 scaling, 51
 size, 50-52, 128, 142-144, 199
 style, 47, 51-52, 142
 substitution, 129
frechand, 10
frechand line, 9, 10, 101, 103
full size box, 13, 14, 108, 199

gray background, 10, 11, 198
grid, 20, 21-22, 70, 164, 199 see also: Turn Grid On/Off
Group command, 58, 68-69, 95, 170
grouping objects, 58, 68-69

handles, 20, 23, 57, 69, 138, 170, 171, 199
handling objects, 57-70
Hide/Show Page Breaks command, 157-158
Hide/Show Ruler Lines command, 155-156
highlighting, 34, 199
high resolution, 73, 75, 110-111, 164, 178, 180, 181

Index

I, see: cursor
icon catalog, 79-82, 189-191
Icon Chooser command, 79-82, 188-193
Icon Editor command, 193
icons, 1, 9, 10, 79-82, 188-193, 200
ImageWriter, 42, 120, 124-125, 130-131
intensity, see: color mixers
italics, 4, 47

keyboard, 3, 9, 102

LaserWriter, 42, 120, 126-129, 132-133
launcher, 5, 6, 7, 200
Layout menu, 20, 22, 146-164
lines, 10, 92, 102, 103, see also: frechand line; polyline;
 straight line
line width, 10, 11, 103-104
Lock command, 69, 171
locking objects, 69, 171
low resolution, 73, 75, 110-111, 164, 178, 180, 181
Lower Case command, 144-145

menu bar, 20, 100, 200
menus, 93-95, 109, 112, 134, 142, 146, 165, 178
mixing colors, 77-78, 179-184
mouse, 3, 9, 58
Move to Back command, 65-67, 95, 166-167
Move to Front command, 65-67, 95, 165-166
moving,
 drawing, 13
 objects, 23, 59-62, 65-70, 68, 135-136, 165-177
 an object to a new drawing, 61-62, 135-136

naming drawings, 37-38
New command, 44, 93, 113

- objects,
 - aligning, 70, 172-177
 - counting, 109
 - flipping, 67-68
 - handling, 22, 57-70
 - locking, 69, 171
 - moving, 23, 59-62, 65-70, 135-136, 165-177
 - reshaping, 63, 138-139
 - rotating, 67, 167-168
 - selecting, 23, 57-59, 65, 67, 137-138
 - stacking, 65-67, 165-166
 - stetching, 62
 - unlocking, 69, 172
- Open command, 45, 93, 114-115
- open figures, see: polyline
- opening a drawing, 45-46
- Other Size box, see: fonts, scaling
- option key, 10, 102, 103, 201
- outline, 9, 10, 12, 19, 103
- oval, 9, 10, 92, 101, 102

- page breaks, 13, 83, 157-158, 164
- Page SetUp command, 123-129
- page size, 13, 83, 124, 126
- paint programs, 1, 22
- Paintworks Plus, 1, 2, 22, 119
- paper, 124, 126
- Paste command, 59-62, 94, 135-136
- patterns, 1, 10
 - adding color, 71-72, 78, 186
 - changing, 71-72, 184, 186
 - saving, 115, 188
 - selecting, 12
 - using, 30, 106

Index

pointer, 3, 6, 9, 10, 18, 75, 101, 102, 201
polygon, see: polyline
polyline, 9, 10, 31, 32-34, 63, 64, 92, 101, 102
Print command, 42, 94, 129-133
printer port, 40-41, 120, 121, 122
printers, 40-42, 120, see also: ImageWriter; LaserWriter
printing, 40-42, see also: Page SetUp command
program disk, 2, 5, 7, 39, 81

Quit command, 15, 94, 133
quitting *Draw Plus*, 15

RAMdisk, 5
rectangle, 9, 18, 64, 92, 101, 102
removing a drawing from the screen, 14
replacing a drawing, see: Save command; Revert command
Reshape command, 63, 138-139
reshaping objects, 63, 138-139
Revert command, 118-119
Rotate Left command, 67, 167-168
Rotate Right command, 67, 168
rotating objects, 67, 167-168
Round Corners command, 64-65, 139-140
rounded corners, 10, 64-65, 139-140
rounded rectangle, 9, 10, 64, 92, 101, 102, 201
ruler lines, 11, 13, 21, 22, 89, 155-156, 164, 201
rulers, 20-21, 22, 88-90, 146-152, 164, 201
 custom, 88-90, 147-152

Save As command, 37-38, 40, 117-118
Save command, 37-38, 40, 93, 115-117
saving a drawing, 37-40, 115-118
saving changes, 43, 112-113, 115-118, 184
scaling, 14, 82, 88, 108
ScienceFair, 81

- scroll, 202
 - arrow, 28, 107, 202
 - bars, 13, 28-29, 87, 107, 202
 - box, 14, 28-30, 87, 107, 202
- scrolling, 13-14, 27-30, 45, 202
- Select All command, 59, 137-138
- selecting, 202
 - colors, 12, 75
 - objects, 20, 23, 57-59, 65, 67, 137-138
 - patterns, 12
 - tools, 11, 34
 - line widths, 11
- selection box, 23, 57-58, 68-69, 164
- shade, see: color mixers
- Shapes, 58
- shift key, 10, 58, 91, 92, 102, 103, 202
- Show/Hide Rulers command, 21, 146-147
- Show/Hide Size command, 156
- shrinking a drawing window, see: full size box
- size, see also: Show/Hide Size command
 - fonts, 50-52
 - icons, 82
 - objects, 26-27, 83, 164
 - drawing, 13, 83-87, 158-162
 - page, 13, 83, 124, 126
- size catalog, 50, 51
- spectrum palette, 73-74, 95, 179, 180-181
- starting a drawing, see: New command
- straight line, 9, 12, 31, 92, 100, 101, 103
- starting *Draw Plus*, 5
- stretching an object, 62
- text, 1, 9, 24, 47-54, 95, 101, 102
 - positioning, 48, 52-54
 - reduce or enlarge, 128-129

Index

Text menu, 49, 95, 142-145
title bar, 13, 37, 43, 203
Title command, 54, 145
title screen, 6, 8
tool palette, 9, 10, 101, 103
tools, 9, 91-92
 selecting, 11, 91
transparent, 30
Turn Grid On/Off command, 22, 48, 152-155
type,
 styles, 4
typeface, see: fonts

underlining, 52
Undo command, 39, 94, 134
Ungroup command, 69, 95, 171
Unlock command, 69, 172
unlocking objects, 69, 172
unreadable screen, 75-76, 182
Upper Case command, 145
uppercase letters, 144-145

window, 72, 203
working color, 73-76, 179-182
Writer's Choice elite, 2

zoom boxes, 13, 14, 108-109, 203



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